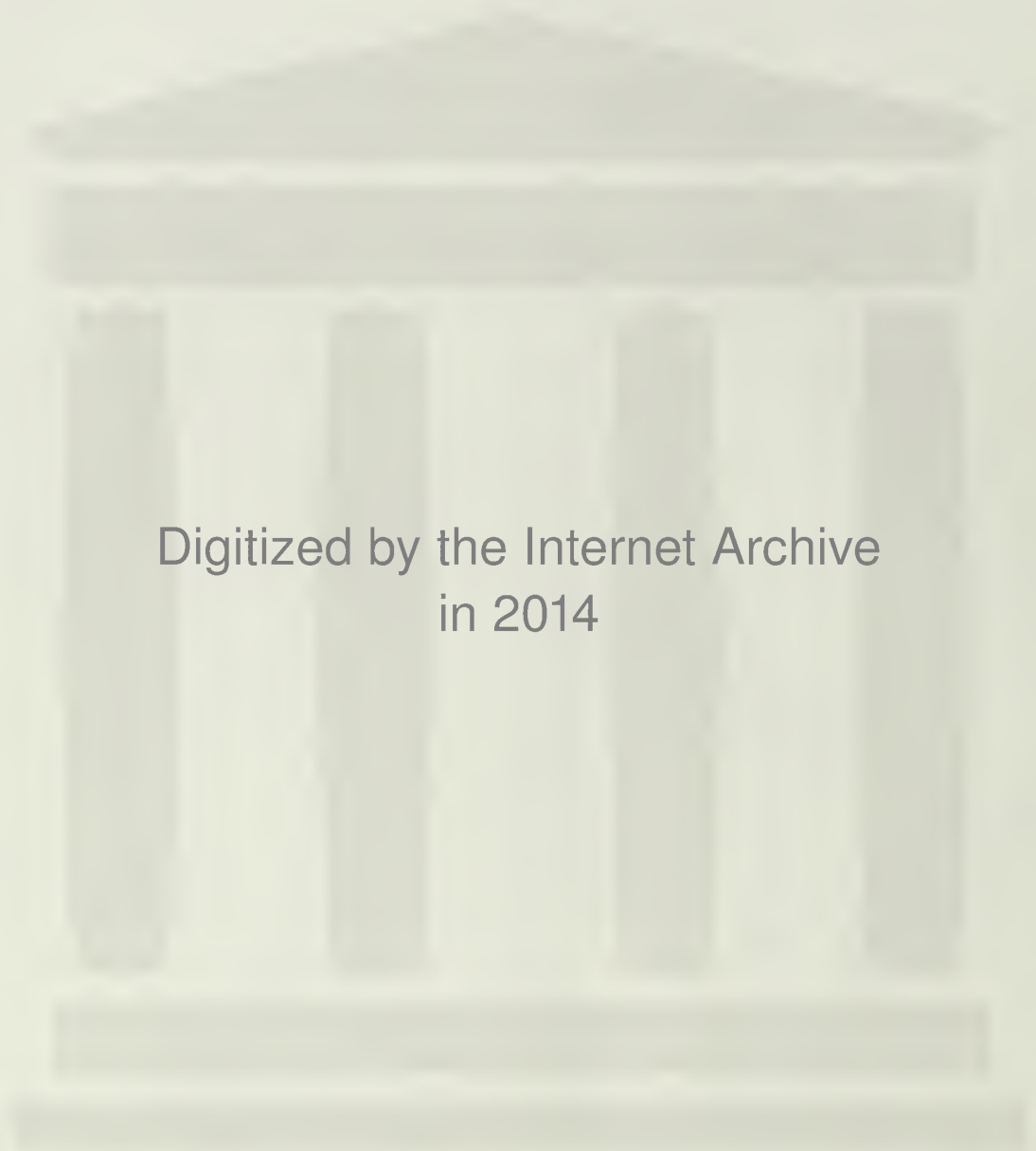
The Impact of the Prospective Payment System

On Access and Quality of Care

For Medicare Beneficiaries

Interim Report

June 1987



MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

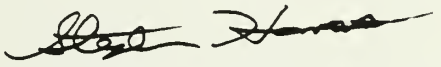
ACKNOWLEDGMENTS

This report was produced by the research and consultant staff of the Office of Policy Analysis in the Division of Health Care Quality. We wish to thank Irene R. McManus, Director of the Division, for her ongoing support and committent to the successful completion of the report. The survey document was developed with the advice and guidance of the Quality Evaluation Subcommittee, chaired by Kathleen Connelly, Assistant Director for Policy Analysis. We thank the Subcommittee members for giving so generously of their time. The report itself and its conclusions are solely the responsibility of the Department.

We wish to acknowledge, in particular Dr. Paul Dreyer, Coordinator of Research and Systems, who supervised the data analysis, assisted in the design of the survey, and is the coauthor of the report.

We wish also to acknowledge Jonathan D. Bogen, DRG Project Manager and primary author of the report, who conducted the analysis of the data and design of the survey. Acknowledgments are due Peggy Reiley, M.S.N., M.S. who assisted in researching the literature, performing data analysis, and in many other phases of the project.

Thanks are due to the staff of the Medicare Patient Advocacy Office of the Division who provided helpful suggestions and comments and to the Massachusetts Hospital Association for providing valuable input in the development of the survey.



Stephen Havas, M.D., M.P.H., M.S.
Acting Commissioner of Public Health

Medicare Patient Advocacy Advisory Committee

Quality Evaluation Subcommittee

Kathleen Connelly, Chair

Division of Health Care Quality

Stuart Altman, Ph.D.
Heller Graduate School, Brandeis University

Stephanie Davidson, R.N.
St. John's Hospital

Helen DiSena
Boston Visiting Nurse Association

Katherine Domoto, M.D.
Department of Health and Hospitals

Deborah Epstein
Massachusetts Federation of Nursing Homes

Daniel Everitt, M.D.
Division of Aging, Harvard Medical School

Harvey Feinberg, M.D., Ph.D.
Harvard School of Public Health

Elsie Frank
Massachusetts Association of Older Americans

Anne Hargreaves, R.N.
Massachusetts Nurses Association

Ann C. Harris
Blue Cross of Massachusetts

Anita Hume, R.N.
Sancta Maria Hospital

Karol Joseph
Massachusetts Hospital Association

Annette Kasabian
Division of Health Standards and Quality
Health Care Financing Administration
DHHS

Joseph Lydon
Massachusetts Association of Community Health Services

Chris Mitchell
Executive Office of Elder Affairs

Frank A. Niro
Choate-Symmes Health Service

Diane Paulson
Massachusetts Medicare Advocacy Project, Greater Boston Elderly Legal Service

Marianne Prout, M.D.
Boston University School of Medicine and Public Health

Tera Younger
MassPRO, Inc.

THE EVALUATION OF THE PROSPECTIVE PAYMENT SYSTEM

Chapter 574 mandates the Department of Public Health to evaluate the impact of the Medicare Prospective Payment System (PPS). The goal of the evaluation is to determine whether the quality of care to Medicare beneficiaries has been affected "including the appropriateness of admissions and discharges to acute care hospitals."

This summary of findings discusses results from the Department's survey of acute care hospitals in Massachusetts conducted from January to March 1987.

The survey was mailed to all hospitals in Massachusetts reimbursed under the Medicare DRG prospective payment system. The three sections of the survey were distributed to the hospital CEOs, vice-presidents of nursing, and coordinators of discharge planning. Ninety percent of the hospitals completed and returned the survey questionnaire.

Hospitals reported the following changes with respect to practices, policies, or procedures:

- o **Services**. Since October 1985, Geriatric Assessment Units were added or supplemented in 31% of the hospitals and home care programs in 35% of hospitals. No hospitals reported elimination of any routine services, although pediatric services were reduced in 12% of the hospitals.

- o **Major Medical Equipment**. Twenty-three hospitals (28%) reported a delay in ordering of major medical equipment since FY1986 or FY1987. 11 of these hospitals cited funding or reimbursement problems as the reason for the delay, although only three specifically mentioned PPS.

- o **Physician Profiling**. Seventy-four percent of the hospitals reported that they have increased the level of profiling of their physicians, with PPS reported as the most significant reason for this increase in tracking physician practice patterns.

- o **Nursing Staff**. Seventy percent of hospitals reported a decrease in the size of the nursing staff, with 59% reporting a decrease in nursing support staff as well. Twenty-three nursing vice-presidents report that nurses have less time to spend on patient care as a direct result of the reduction in support staff.

- o **Utilization**. Of the non-municipal hospitals reporting statistics, the shift to ambulatory care and PPS were cited by hospital administrators as the two most significant factors in this decline in inpatient census.

Hospitals reported the following with respect to changes in patient characteristics and needs:

- o **Acuity**. Ninety-one percent of hospital administrators reported that levels of patient acuity increased in the period October 1981 to the present, with 81.3% reporting that PPS was a significant factor in affecting this change. Ninety-two percent of the nursing administrators reported an increase in patient acuity, with 86% rating PPS a significant factor in causing the change. Both hospital and nursing administrators cited the increasing utilization of outpatient services as the most significant factor in bringing about increases in acuity, with PPS rated as the second most important factor.

- o **Need for Post Acute Services**. Eighty percent of the discharge planners reported a significant increase in the number of patients needing post-hospital services in recent years. These increases were most dramatic after the inception of PPS -- FY1986 and 1987. Home health care and skilled nursing services were areas with the greatest increase in need. As a result, 80% of discharge planners report the supply of SNF beds as inadequate or very inadequate; similarly, over 50% of discharge planners report the supply of home health and homemaker services as inadequate or very inadequate.

Our survey findings as well as reports from other states demonstrate that hospitals have reacted to the incentives of DRG reimbursement; patients are discharged earlier and many unnecessary hospital tests and procedures have been eliminated. Indications are that the Medicare program, primarily due to DRG reimbursement, has decreased its expenditures for inpatient care. (ProPAC, 1987). However, the locus of care has only shifted to alternative treatment sites along with a much greater dependence on other non-hospital based services.

As a result of these cost containment incentives and aging of the Medicare population, hospitals are caring for more acutely ill patients than in the past but with smaller nursing and support staffs. Hospitals reported that more patients need post-hospital care and services because of earlier discharge as well as an older and sicker patient population, but found the supply of these services to be inadequate. Many of the social service, nursing, and hospital administrators expressed frustration with a reimbursement system that encourages early discharge of Medicare patients, while increasing the need for post-hospital services that had been viewed as inadequate prior to the Prospective Payment System.

TABLE OF CONTENTS

PAGE

LIST OF TABLES AND FIGURES

LIST OF TABLES

LIST OF TABLES AND FIGURES

LIST OF TABLES

List of Figures

GLOSSARY OF ACRONYMS AND TERMS

Acronyms

ADL	Activities of Daily Living
PPS	Prospective Payment System
DRG	Diagnosis Related Group
FY	Fiscal year
GAO	General Accounting Office
HMO	Health Maintenance Organization
ICF	Intermediate Care Facility
ICU	Intensive Care Unit
LOS	Length of Stay
LPN	Licensed Practical Nurse
PRO	Peer Review Organization
ProPAC	Prospective Payment Assessment Commission
RN	Registered Nurse
SNF	Skilled Nursing Facility
ALOS	Average Length of Stay
MAC	Maximum Allowable Charge
HSA	Health Systems Area
CMI	Case Mix Index

Terms

Cost Based Reimbursement - Reimbursement system in which hospital payment is based on incurred costs.

Intermediate Care Facility - A Level III nursing home.

Skilled Nursing Facility - A Level I or II nursing home.

Marginal Cost - The cost of producing one more unit of a product.

Profiling- The practice of analyzing physician practice patterns.

INTRODUCTION

On October 1, 1985, all non-municipal hospitals in Massachusetts implemented the Medicare Prospective Payment System (PPS). The nine government-operated hospitals in Massachusetts came under the system in July 1986 bringing all hospitals except for the exempted and federally-owned hospitals under PPS. According to Massachusetts Hospital Association "this marked change in the Medicare reimbursement system may have a major impact on hospitals in the Commonwealth because of the importance of Medicare patients to hospitals." (MHA, 1986).

Under Chapter 574, Section 13 the Massachusetts Department of Public Health is mandated to conduct an evaluation of the Medicare Prospective Payment System. The Division of Health Care Quality (DHCQ) in the Department of Public Health is conducting the evaluation in three interrelated studies. These studies include (1) an in-depth survey of all non-exempt Massachusetts hospitals to determine the hospitals' organizational response to the PPS system, (2) a retrospective analysis of statewide hospital discharge data and utilization trends to determine if access or quality of hospital care provided to Medicare beneficiaries is affected, and (3) an ongoing study based upon on-site reviews by DHCQ survey teams regarding patients in long-term care facilities to determine appropriateness of placement and health status. Based upon the three studies we should be able to answer the following questions:

(1) Have shifts in utilization of hospital services (i.e. decreases in ALOS, an increase in patient transfers, or readmissions) occurred since the inception of Medicare PPS and if so, do these shifts represent access or quality of care problems?

(2) Are changes in hospital use related to management or behavior changes by the hospital?

(3) Are patients recently discharged to long term care prematurely discharged and in need of more post-hospital care and services than similar patients discharged prior to PPS?

This interim report discusses findings from the Department's survey of acute care hospitals conducted from January to March 1987. This report is organized into the following sections: (1) Introduction- provides background on the development of PPS; (2) Methods- describes the survey population, content, and question formats; (3) Findings of the Hospital Survey- describes changes in hospital management practices and the needs of Medicare patients; (4) Potential Effects of PPS- describes the likely impact of PPS on access and quality; (5) Results of Current Studies- documents what various studies and reports on PPS have found so far; (6) Discussion- describes the important issues emerging from the survey, limitations of the survey, and the need for further studies; (7) Appendices- contains a copy of the survey document, list of hospitals, and comments from hospitals regarding the impact of PPS.

Background

Medicare was enacted during the Johnson administration and is the most popular of the Great Society legacies. (Bayer, 1985). It was signed into law on July 30, 1965, as Title 18 of the Social Security Act. The original intent of Medicare was to provide equal access to health care for the elderly and to insure that the elderly received the same quality of "mainstream" health care that the rest of the insured population enjoyed. Medicare has been successful in meeting its primary objective. Significant achievements of the program are that income-related barriers to health care for the elderly have largely disappeared. (Long and Russel, 1984). The program has been successful in integrating the elderly into mainstream American health care. (Aiken, 1984).

Despite its success, the Medicare program has also had problems. Because of the increasing cost of health care, the proportion of income that the elderly pay for health care is now larger than it was before the enactment of Medicare. In addition, Medicare provides only a minimal amount of protection against catastrophic health care costs. (Blumenthal et al., 1986).

Federal legislators today are concerned with the skyrocketing costs of the Medicare program. In 1982, health care costs went up almost three times the national rate of inflation. (Iglehart, 1983). In 1984, total national expenditures for health care were 10.6% of the gross national product (GNP), compared to 6.0% in 1965. Total expenditures for Medicare were 6.4 billion dollars in 1984. Projections are that Medicare's Hospital Insurance Trust Fund will be seriously depleted by 1990. (Aiken and Bays, 1984).

There are a variety of reasons why the United States has experienced this rapid growth in health care spending. Rising expectations in the nation regarding the value of health care, the rapid development of medical technology, the nature of reimbursement mechanisms, the lack of competitive forces to increase efficiency and productivity, and government financing of health care are among the major reasons cited as contributing to the rise in health care expenditures. (Gornick et al., 1985).

To help control expenditures of the Medicare program, Congress passed the Social Security Amendments of 1983 (Public Law 98-21). This law changed the method by which hospitals were reimbursed by Medicare from a retrospective cost-based system to a prospective system (the Prospective Payment System or PPS). Under this new system, hospitals are reimbursed a predetermined price for each patient according to his/her diagnostic group as determined at the time of discharge. To date, there have been 467 such "diagnosis related groups" (DRGs) established for reimbursement purposes. Prior to October 1, 1985 the state of Massachusetts was one of several states given a waiver from the Medicare PPS system in order to try an alternative reimbursement system (Chapter 372). The waiver ended October 1985, and Massachusetts hospitals have been under the Medicare PPS system since that time.

Prospective Payment by DRG

Prospective reimbursement by diagnosis related groups completely changed the incentives by which hospitals operate. The former cost-based system contained few incentives to control costs, since higher charges resulted in higher levels of reimbursement. (Gutterman and Dobson, 1986). In some situations, this resulted in more care in the form of tests or additional hospital days. The prospective payment system, however, provides hospitals with incentives not to provide unnecessary care. (Wennberg, 1984). The implicit incentive in prospective payment is to provide care at the lowest cost, which can result in fewer hospital days, fewer procedures, or fewer tests. Because a hospital receives a pre-determined rate for each DRG, if the hospital delivers care at a lower cost than the DRG rate, it will keep the difference.

These new incentives could be beneficial, if the assumption holds that prior to PPS patients were being tested needlessly, had many unnecessary procedures, and were hospitalized for too many days. PPS would also be beneficial if institutional behavior changes so that management techniques which control costs are introduced, accompanied by a careful analysis of the costs and benefits of new technologies or procedures. (Fineberg and Hiatt, 1979).

However, DRG reimbursement could be detrimental to patients if DRG reimbursement inappropriately influences hospital administrators or physicians to discharge patients prematurely or limit needed tests and procedures. (Inglehart, 1986). Monitoring the effect of DRG reimbursement is critical to assure that the original intentions of the Medicare program -- to provide equal access to high quality health care -- are not being eroded by this new reimbursement system. Figure 1 summarizes some of the potential effects of PPS on beneficiaries and the health care system.

FIGURE 1: POTENTIAL EFFECTS OF PPS

Incentives	Beneficiary Effects	System Effects
Decrease length of hospital stay.	May enhance quality by decreasing risk of hospital acquired diseases. Patient's psychological state may be enhanced. May diminish quality by premature discharge.	Increase in level of illness of hospitalized patients. Shifting of care to outpatient setting, with resultant increase in need for home health care, pre-admission testing, outpatient surgery. Increase in level of illness in patients requiring home care services. May lead to more vertical integration of services.
Decrease in ancillary services.	May enhance quality by decreasing needless testing or procedures. May diminish quality if crucial testing not performed. May cause delays in detecting problems unrelated to illness.	Shifting of ancillary services to outpatient setting.
Increased specialization particularly in profitable DRGs.	High patient volumes may enhance quality. May inhibit access to care for unprofitable DRGs.	Increased transfer rates among hospitals. Municipal hospitals may fiscally suffer due to "dumping" of unprofitable DRGs. Reduction of health care costs due to economies of scale.

Incentives	Beneficiary Effects	System Effects
Development of improved management techniques, such as management information systems, profiling of physicians. Hospitals will become more "business oriented".	Improved quality if clinicians re-examine practices and change practice of unnecessary testing, hospitalization. Quality at risk if physicians are pressured to discharge patients prematurely.	Decrease direct care cost. Increase administrative cost. Increase competition among hospitals. Unprofitable hospitals may close beds, wards, or entire hospital. Increase in planning and marketing. May enhance or hinder hospital administrator/ physician relationships.
Ongoing technology assessment and evaluation.	Could enhance quality if focus is more on prevention. Could diminish quality if life-saving, though costly, technology is not adopted. Could decrease access to high cost ICUs.	May lead to adoption of more cost-saving technology. Could lead to slowing of expensive new product development that may be cost-saving in the long run.

Source adapted from: Lohr, K., 1985 and Office of Technology Assessment, 1985.

METHODS

Survey Population

The Prospective Payment System was implemented at all non-municipal hospitals in Massachusetts on October 1, 1985 (Fiscal Year 1986 for private hospitals) and in all municipals on July 1, 1986 (Fiscal Year 1987 for public hospitals). The hospital survey was mailed in January 1987 to all acute care non-PPS exempt hospitals in Massachusetts - a total of 104 hospitals. Maternity hospitals, pediatric hospitals, psychiatric hospitals and hospitals with special PPS exemptions (e.g. an institution designated as a clinical cancer center) were excluded.

Survey Questionnaire Development

The initial draft of the hospital survey was developed after an extensive literature review and discussions with hospital personnel at four representative hospitals. The interviews with hospital personnel suggested that three main areas of the hospital would most likely be affected by DRG reimbursement in the short term -- Administration, Nursing, and Discharge Planning. The resultant draft of the questionnaire was then presented to a committee of health care experts in Massachusetts who provided extensive comments, resulting in the final draft.

The survey questionnaire was pretested at five hospitals to insure the reliability of the requested data. The pretest hospitals were representative of the survey population based upon hospital size, teaching affiliation, and geography. The questionnaire was then revised based upon comments and concerns of the pretest hospitals. The questionnaire was mailed to 104 hospitals for distribution of the pertinent section to the Hospital Administrator, Vice-President for Nursing, and head of Discharge Planning department. The final survey instrument is provided in Appendix I.

Survey Content

The survey development process resulted in two sorts of questions about the potential impact of PPS. First, PPS might affect quality and access indirectly through changes in hospital management practices. Questions about potential changes in hospital behavior included the following:

1. Have hospitals altered the mix of services they provide?

2. Are physicians' practice patterns being evaluated in order to affect length of stay (LOS)?

3. To what extent are patients informed about the consequences of DRG reimbursement regarding denial of continued stay?

4. Has the size or mix of the nursing staff changed in response to PPS?

5. Do nurses report that they have less time to spend in direct patient care or patient education?

6. Have procedures and practices of discharge planning departments changed in response to changing patient needs under PPS?

The second set of questions concerned the needs of Medicare patients during hospitalization and after discharge. The survey attempted to answer the following questions concerning acute care and post hospital care:

1. Do Medicare patients require more post-hospital care or services since the inception of PPS?

2. What is the condition of patients admitted since PPS (patient acuity levels)?

3. Are patients admitted since PPS more "at risk" because of early discharge?

4. Is the current level of post-hospital services adequate to meet patient need, and are discharge planners satisfied that patients receive the services they need after hospitalization?

The discussion which follows describes the survey's approach to answering these questions.

Question Formats

The stated goal of the evaluation was to determine the effects of PPS on access and quality of hospital care for Medicare beneficiaries. Because Massachusetts hospitals have been affected by many factors other than DRG reimbursement, the survey questions first determined if and when a change took place, and then asked for ratings on a five point scale (1 = not significant to 5 = very significant) of the importance of PPS and other potential causal factors. This approach gave hospitals the opportunity to rate the importance of PPS in the context of other major influences in the environment such as the aging of the population or the increasing importance of the HMO market. These influences consisted of the environmental or market factors and regulatory or reimbursement factors listed below.

Environmental or Market Factors

- Change in the number of admissions
- Change in the number of beds
- Change in the inpatient length of stay
- Competition among hospitals
- Aging of the population
- Increased patient acuity
- Change in patient expectations
- Impact of HMO programs in hospitals
- Medical technology development
- Change in the labor supply of health care workers
- Use of temporary health care workers

Regulatory/Reimbursement Factors

- o Medicare PPS/DRG reimbursement
- o Chapter 372
- o Shift to treating patients in the outpatient setting
- o Other cost containment programs
- o PRO review
- o Malpractice climate

In addition to questions about changes in hospital practices, the survey asked for basic demographic information regarding each hospital and for utilization statistics from October 1981 (For non-municipals) or July 1981 (for municipals) to the present.

FINDINGS OF THE HOSPITAL SURVEY

The response rate to the hospital questionnaire was 90% -- 94 acute care hospitals responded. The list of responding and non-responding hospitals is given in Appendix II. Demographics of the hospitals are given in Table 1. Thirty hospitals (32%) indicated that they were teaching hospitals or had medical school affiliations. The majority of the hospitals responding were in the medium size range, and HSA 4 (Boston) represented the largest number of hospitals surveyed with 32 responding. Ninety-one hospital administrators responded to the administrator section of the survey, 92 nursing vice-presidents responded to the nursing section, and 94 discharge planners responded to the discharge planning section.

Utilization

Occupancy rates for all payers decreased steadily from a high of 79.2% in fiscal 1982 to 62.8% in fiscal 1986, a decline of 16.4% (see Table 2). This decline was paralleled by a decrease in average length of stay of 12.8% (8.6 days in FY1982 vs. 7.5 days in FY1986). For non-municipal hospitals, the occupancy rate decreased from 79.3% (FY1982) to 62.3% (FY1986), the year PPS began. This decline in occupancy rates is partially explained by the decrease of approximately a day in average length of stay during the same period (8.6 days in FY1982 vs. 7.5 days in FY1986) as well as a decrease in admissions.

Administrators rated the significance of seven regulatory, market and environmental factors in influencing these changes in the hospital census since October 1981. Scores ranged from 1 to 5 (1 = not significant, 2 = significant, 5 = very significant). This rating system was used for all rating questions. For each hospital, mean scores for each factor were computed. The difference among these means was statistically significant ($p<.001$, see Appendix III for detailed explanation of statistical analysis). Since the utilization data were reliable only from FY1982 through FY1986 and municipal hospitals had not yet implemented PPS, they were excluded only from this census analysis. The most important factors were the shift in treatment from inpatient to outpatient settings (mean rating = 4.16) and PPS (mean rating = 3.75, see Table 3) for the reported decline in occupancy rate since FY1982.

Hospital Management Practices

Services

Twenty-eight hospitals reported that they have either added or supplemented geriatric assessment units since October 1985 and 32 hospitals have either added or supplemented their home health care services. No services were reported eliminated, but pediatric services were reduced in 11 hospitals. Twenty-three hospitals (28% of those responding to this question) reported that during FY1986 or FY1987, they delayed the purchase of major medical equipment exceeding 400,000 dollars. Funding concerns or the reimbursement climate were cited in 11 hospitals as reasons for the delay, although only three hospitals specifically mentioned PPS.

Physician Practice

Many hospitals have adopted the practice of physician profiling, i.e., the analysis of physician practice patterns, to track physicians who are high users of hospital services (e.g., patient days, ancilllaries) and may be indicative of potential quality problems as well. Eighty-Six administrators reported on changes in the practice of physician profiling. 74% indicated that they had increased profiling since 1982, 11.6% reported a decrease, and 14% reported no change in profiling practices. A majority (56%) of those administrators who indicated an increase in profiling rated FY1986 as the year in which the greatest increase occurred. Administrators rated the importance of nine regulatory and environmental factors in affecting the change in profiling physician practice patterns. Scores ranged from 1 to 5. Table 4 presents the means of these factors. The rating associated with DRG reimbursement -- 4.24 on the 5 point scale -- was the highest rating among the factors and significantly higher than the other factors ($P<.001$). Another regulatory factor, the PRO program, was also rated as significant.

DRG Information

Eighty-four hospitals responded to this question. Sixty-two hospitals (74%) said that they provide patients information by a pamphlet and 61 hospitals (73%) said that they provide a personal explanation to the patient regarding the implications of DRG reimbursement to the patient.

Nursing Staff

Ninety-two hospital nursing vice-presidents responded to this section of the survey. Sixty-five nursing administrators (71%) reported that the size of their nursing staffs had decreased since FY1982. FY1986 was the year most highly associated with this decline (Table 5). Decreases were reported for all types of nursing staff, with LPNs, aides, and support staff reported as decreasing in the majority of hospitals (Table 6). Decreases in support staff were not associated with increases in RNs; that is, RNs were not substituted for decreases in other staff.

Nursing administrators rated the importance of 13 factors in bringing about these changes since FY1982. In hospitals reporting a decrease in nursing staff, factors related to the hospital census and PPS were the major causes for the decline (Table 7). The decrease in ALOS and the decrease in the number of admissions were the two most significant factors. DRG reimbursement was ranked third with a mean score of 3.53, indicating a moderately significant impact. In light of the current publicity about nursing shortages, it is interesting that the shortage in the labor force ranked sixth behind the census factors and was only moderately significant with a score of 3.1.

Nursing administrators next judged whether nurses, since FY1982, have more or less time to provide patient education. Fifty-nine or 64% of 74 responding reported that nurses have more time to provide patient education. Fifty-three reported that their hospitals have developed new patient education programs.

Educational programs related to diabetes and cardiac rehabilitation were reported most often. Also, hospitals are now formalizing the patient education process with standardization via closed circuit T.V., video, through self-help pamphlets, and with professional health educators. Because of reduced preoperative periods and earlier discharge, many hospitals reported expanded preadmission educational programs as well as post-discharge programs.

Nursing administrators finally judged whether the ability of the nursing staff to perform "professional nursing functions" has been affected by changes in the number of support staff (e.g., pharmacy, dietary, etc.). The responses were evenly split, with 42 nursing administrators reporting a change in nurses' ability to perform their nursing functions, and 42 indicating no change. Of the 42 responding in the affirmative, 23 indicated that nurses must spend time on tasks formerly performed by support personnel (e.g., clerical functions, housekeeping, transportation).

Discharge Planning

Since FY1982, 45 hospitals indicated an increase in their discharge planning staffs. No one year was particularly associated with this increase. This is not surprising given the increased emphasis by hospitals since the early 1980's on case management.

Formal screening at admission was the most frequent method of referral of patients needing discharge planning (74 out of 89 used this method).

Needs of Medicare Patients

Severity of Illness

The vast majority of hospital administrators and vice presidents for nursing perceived an increase in the severity of illness of patients within their institutions (Table 8). Ninety-one percent of administrators and 92.4% of vice presidents for nursing indicated that the severity of illness within their institutions had increased since FY1982. Only 2.3% of hospital administrators and 1.1% of vice presidents for nursing reported a decrease in the severity of illness.

Fifty percent of hospital administrators and 40% of vice presidents for nursing indicated that FY 1986 -the year in which PPS began- was the year most associated with a change in severity of illness (see Figure 2).

Respondents rated the significance of a variety of factors in affecting these changes in severity on the usual five point scale. The results from both administrators and vice presidents for nursing (who had previously indicated that there was an increase in severity of illness) were similar. Differences among the factors were statistically significant ($P<.001$). The factors with the highest mean rating were the increase in outpatient services, followed by aging of the population. Medicare PPS was rated as a significant factor (rating 4 or 5) by 83.1% of administrators and 89.3% of vice presidents for nursing. The mean score for PPS was 3.66 for administrators and 3.75 for vice

presidents for nursing (Table 9).

Need for Post-Hospital Services

A large majority of discharge planners (80.2%) reported an increase since FY1982 in the number of Medicare patients requiring post-hospital services. Only 5.5% of discharge planners reported a decrease in the number of patients required post-hospital services (Table 10). The largest percentage of discharge planners (46.9%) indicated that FY1986 was the year most associated with the change in the number of Medicare patients requiring post-hospital services.

An analysis by HSA pinpointed geographic regions within the Commonwealth in which discharge planners reported a higher level of need for post-hospital services. Ninety percent of discharge planners from HSA 6 reported an increase in the need for post-hospital services whereas 71% of discharge planners from HSA 1 reported an increase in the need (Table 11).

Discharge planners next judged changes in the need for specific post-hospital services. For each service, respondents judged whether the need for particular services had increased, decreased, or remained the same. Over 50% of discharge planners reported an increase in the need for all services that were surveyed. The areas in which an increase in need was most frequently reported were home health care, homemaker services, and skilled nursing facilities (Table 12). All discharge planners in HSA 5 reported an increase in the need for skilled nursing facilities; likewise, all discharge planners in HSA 3 reported an increase in the need for home health services (Table 12).

In addition to describing the changes in the need for post-hospital services, discharge planners rated the significance of a multitude of factors in causing a change in the number of Medicare beneficiaries who require post-hospital services. Factors were rated on the usual five point scale. The factors most significant in increasing the need for post-hospital services were the aging population, increased acuity and change in patient length of stay, in that order. PPS received a mean rating of 4.01, suggesting that it was also viewed as a significant factor in increasing the need for post-hospital services (Table 13).

Finally, discharge planners were finally asked if they determine whether post-hospital care services were actually provided as planned. Seventy-one percent of discharge planners indicated that they make such determinations. Only 54.1% of these discharge planners were satisfied that patients actually received the post-hospital services that they needed.

The Supply of Post-Hospital Care Services

In addition to reporting on the need for post-hospital services, discharge planners rated the adequacy of the supply of various post-hospital services in their areas. Ratings were on the usual five point scale ranging from 1 (very adequate) to 5 (very inadequate). Table 14 shows the mean scores for each service. The supply of SNFs was judged on average as inadequate to highly

inadequate. The supply of homemaker services and respite care services were judged on average to be inadequate or only marginally adequate. The supply of adult congregate living situations, ICF's, and home health care services were judged on average as only marginally adequate.

Ratings of the adequacy of the supply of post-hospital services may be compared to the ratings of changes in the need for post-hospital care among recently discharged patients. The comparison shows that the need for SNF level care and homemaker services among discharged patients is increasing, while at the same time the supply of these services is viewed as seriously inadequate.

Table 15 categorizes the adequacy of the supply of post-hospital services by HSA according to discharge planners. The supply of SNFs was judged as inadequate by discharge planners across all HSAs except for HSA 1, in which only a marginal to inadequate supply was reported. The supply of home health services was judged inadequate by 50% of the discharge planners in HSAs 4 and 5, and by 43% in HSAs 1 and 3. Several discharge planners reported a greater need for adult day health in response to open-ended questions, but the supply of this service was actually rated a problem only in HSA 5.

Barriers to Placing Hospitalized Patients in Skilled or Intermediate Nursing Facilities

Anecdotal evidence indicates that the access to post-hospital services is the most problematic aspect of PPS. One method of determining if such access problems exist is to assess the degree to which the difficulty of placing patients in skilled or intermediate care facilities has changed.

A high percentage of discharge planners (72.8%) reported increasing difficulty placing Medicare recipients into skilled or intermediate care facilities since FY1982. Only 4.3% of those surveyed reported fewer difficulties in placing Medicare patients since FY1982. (Table 16).

Thirty-four percent of discharge planners reported that FY1986 was the year in which the difficulty of placing patients into nursing homes increased most significantly. FY1985 -- selected by 15% of discharge planners -- was the next most important year.

Table 17 shows the difficulty of placing Medicare patients by HSA. There were wide variations in the perceptions of discharge Planners. Eighty-seven percent of the discharge planners in HSA 4 reported an increase in the difficulty of placing Medicare patients, whereas only 50% of the discharge planners in HSA 1 reported such an increase.

Discharge planners next rated the significance of various barriers to placing Medicare patients in nursing homes. Barriers were rated on a five point scale (1= not significant as a barrier, 5= very significant as a barrier). The barrier with the highest mean score was the availability of skilled nursing facilities, followed by the need for heavy care and need for complex services. Medicare rules received a mean rating of 3.89, or moderately significant (Table 18).

Difficulty in Arranging for Home Care

Eighty percent of discharge planners reported increasing difficulty in arranging for home care services for Medicare patients. Only 11% of discharged planners felt that it had become easier since FY1982 (Table 19).

Table 20 shows the perceptions of discharge planners regarding the change in difficulty of arranging for home care by HSA. All of the discharge planners in HSA 1 reported an increase in the difficulty, whereas 57% in HSA 3 reported such an increase. Forty-three percent of discharge planners indicated that FY1986 was the year most associated with the change in difficulty (Table 19).

Discharge planners finally rated the significance of barriers in arranging for home care (1 = not significant, 5 = very significant). Medicare rules and regulations were the most significant barrier (mean rating = 4.56), followed by the need for heavy care and the patient's social situation (Table 21).

Opinions Regarding the Impact of PPS on Quality and Access: (Responses to Open-Ended Questions)

Respondents from each of the three departments of the hospital were asked to describe the impact of Medicare PPS on the delivery of quality of care to Medicare beneficiaries including the appropriateness of admissions and discharges to the their hospitals. In order to summarize the responses to these open-ended questions, two raters independently scored the open-ended responses of the hospital administrators. The scoring system categorized each open-ended response as indicating a positive impact on quality or access, a negative impact on quality or access, no impact on quality or access, or unable to determine from the response the impact of PPS on quality or access. The raters agreed on 68% of the Access responses and 79% of the Quality responses. These levels of agreement were statistically significant as measured by Kappa coefficients. (Bishop, et al., 1975).

Because the inter-rater agreement was quite high on the administrator's section, the ratings from only the individual who had categorized responses on all three sections are reported. Of the 47 hospital administrators completing this question, 20 indicated that PPS has had a negative effect on access to hospital care and no administrators indicated any discernible positive impact on access due to PPS. Seven hospital administrators indicated a negative impact on quality and only two a positive impact. Fourteen nursing administrators indicated that PPS has had a negative impact on access, and no nursing administrators indicated a positive impact of PPS on access. Four nursing administrators felt PPS has had a negative impact on quality and two felt it had a positive impact. Ten discharge planners felt PPS has had a negative impact on access and only one discharge planner thought it had a positive impact. Eight discharge planners perceived negative effects on quality due to PPS and half that number perceived positive effects on quality. These results are summarized in Table 22. Positive and negative responses are reported in Appendix IV.

POTENTIAL EFFECTS OF PPS ON QUALITY AND ACCESS TO HEALTH CARE

In this section we discuss in greater detail a number of potential effects of PPS that may have bearing on quality and access. In the next section, anecdotal reports and studies from other states identifying quality and access problems are summarized.

There is no direct incentive under the DRG system to increase the quality of medical care or to even maintain existing standards. (Stern and Epstein, 1985). It is evident that the inherent financial incentives may either increase or decrease the quality of patient care provided by hospitals. For example, a reduction in hospital length of stay may enhance quality by increasing psychological well-being of patients due to earlier discharge and lessening the chances of hospital acquired diseases. Conversely, it may decrease the quality of care by leading to an increase in out-of-hospital deaths, increasing the level of sickness or distress of patients discharged home, or by causing greater stress on the family in having to care for at home a recuperating family member. (Lohr et al., 1985). In addition the prospective payment system offers little incentive to provide continued access to care for the difficult-to-treat patient.

We have identified the following five areas in which PPS is most likely to affect access or quality of care afforded Medicare beneficiaries: Technology Acquisition, Specialization, Hospital Type, Intensive Care Services, and Subsidization.

Technology Acquisition

Medical care relies partly on the latest advances in technology in the diagnosing and treating of illness. Under PPS, hospitals may be discouraged from purchasing new and expensive technology. The reason is that the return of investment in this equipment may not be adequately recouped through charges under certain DRGs. As Anderson points out:

> The lower allowance for growth in service intensity implicit in the legislation, the underpricing of technologically intensive DRGs and the delays between changes in medical practice and recalibration of DRG payment rates are all likely to contribute to a decreased rate of acquisition of cost-increasing equipment by hospitals. (Anderson and Steinberg, 1984).

ProPAC in its February 1987 report to Congress questioned "whether technology development will continue at a socially desirable rate under a more cost-conscious payment system." The report continues "the longer term impact of per-case and other cost-containment strategies on technological change needs to be examined." (ProPAC, 1987).

Specialization

There is an incentive for hospitals to specialize in certain services. (Stern and Epstein, 1985). The theory is that high

volume in certain "profitable" DRGs will increase hospital revenues. This may enhance quality by leading to higher volumes of patients in the specialty area, and high volume has been shown in some surgical procedures to be correlated with lower morbidity and mortality. (Luft and Hunt, 1986; Riley and Lubitz, 1985). However, a negative impact could result if access for certain patients becomes more difficult, i.e., locations are non-accessible, or there is a lack of hospital interest in "unprofitable" DRGs. (OTA, 1985; Omenn and Conrad, 1984).

Hospital Type

Some health experts believe that public hospitals with their high proportion of indigent patients and a more severely ill case mix will suffer under DRG reimbursement. Shwartz in his study of 12 New York public hospitals compared 12 non-public hospitals and found a difference in the case mix between these two types of hospitals (as measured by DRGs). (Shwartz et al., 1984). Public hospitals had a higher concentration of patients clustered in a few DRGs. Within these DRGs, patient stays were longer. Shwartz's analysis indicated that there were more "outlier" patients in the public hospitals, some of whom would be compensated at only the average DRG rate (PPS has a provision to reimburse outlier cases).

Prospective payment by DRG includes a teaching adjustment factor for "indirect" medical education expenses. This adjustment is intended to recognize the added costs of treating more severely ill patients at teaching hospitals. Massachusetts is second only to New York in the number of hospital teaching programs. (MHA, 1986). Discussion at the federal level directed at reducing this adjustment could adversely affect teaching hospitals, possibly resulting in reduced access at teaching hospitals for some high cost patients. (Stern and Epstein, 1985).

Intensive Care Services

Butler studied the financial impact of PPS on patients receiving medical intensive care. (Butler et al., 1985). He found that of the 446 Medicare patients studied, the average economic loss per discharge to the hospital was 10,567 dollars. Thomas studied the economic impact of PPS on a tertiary care center which receives critically ill patients via aeromedical transport. (Thomas et al., 1986). He found that among the 105 Medicare patients studied, current reimbursement resulted in a hospital revenue loss of 6,335 dollars per patient. In a similar study, Jacobs found that patients admitted to the hospital with severe trauma incurred charges resulting in a revenue loss of 1800 dollars per patient. (Jacobs and Schwartz, 1986). These findings indicate that severely ill patients may be particularly at risk for quality and access problems, because the cost of treatment is significantly higher than the actual amount reimbursed.

Subsidization

The per-case payment method of DRG reimbursement diminishes the hospital's ability to subsidize certain services by cost shifting between payers. The current Massachusetts prospective system, including Medicare's DRG reimbursement and Chapter 574 provisions

for non-Medicare payers, leaves hospitals with little incentive to subsidize unprofitable services or patients. According to ProPAC's February 1987 report:

> The number of Americans without insurance has grown dramatically in the last few years. Even though hospitals may appear to be realizing large profits, they may be unwilling or unable to continue to shoulder the ever-growing burden of patients who are unable to pay. Thus, some hospitals, usually public, will increasingly be required to meet the needs of such patients. Currently this phenomenon is seen in changing patterns of patient transfers. Inevitably, some citizens may not receive needed care because of their inability to pay. (ProPAC, 1987).

The Chapter 574 Study Commission should provide some needed insight into the funding and delivery of health services for the uninsured and underinsured.

RESULTS OF CURRENT PPS EVALUATION STUDIES

Because of the short time that PPS has been in effect, few published studies describe the impact on Medicare beneficiaries. Much of the information available is anecdotal and not based on scientific methodology. However, this information can lead to the development of important research hypotheses regarding the effects of PPS on quality of health care.

Hospital Management Practices

Hospitals are apparently becoming more management oriented in response to PPS. Nationally, there is evidence that hospitals are changing the way they conduct strategic planning by focusing on market segmentation and competitive position analysis, financial simulation and strategic business units. (Zuckerman, 1984). In Massachusetts, reports are that hospitals are attempting to adapt to PPS by re-educating the medical staff, orienting themselves to a case-management approach, revamping internal procedures, and purchasing new management information systems. (Graham, 1986).

There is also some evidence that patients are being transferred to exempt (non-PPS) units. For example, a study conducted by Hambrecht and Quist, an investment banking firm in San Francisco, showed that 67% of exempt psychiatric units had a significant increase in geriatric patients while only 17% of non-exempt units had such increases. (Baldwin, 1985).

The preliminary scientific data available on the effects of PPS also seem to confirm some of the predictions regarding the impact of PPS. Gutterman examined the effect of PPS on the number of admissions and average length of stay for Medicare patients during the first year of Medicare. Contrary to what was expected, the number of Medicare admissions actually fell 1.7% in 1984. In addition, the average length of stay fell almost one full day in 1984. (Gutterman and Dobson, 1986). Although the length of stay has been falling over the last several years, the decline in 1984 was larger than in previous years.

In addition, the rate of increase in hospital expenses has slowed within the last several years. Because labor represents a significant proportion (60%) of hospital expenditures, staffing has been an area targeted for reductions. The number of total full-time equivalents declined nationwide by 200,000 from early 1983 to the third quarter of 1985, dropping from 3.2 million to 3 million during these two years. (Inglehart, 1986).

New Jersey's experiment with DRG prospective payment began in 1980, three years before Medicare implemented DRGs on a national basis. In a report on the New Jersey experience, Hsaio reported that under the DRG payment system, costs per case decreased primarily due to a sharp drop in ALOS. (Hsaio, 1986). The overall cost savings due to DRGs were somewhat moderated by an increase in the volume of admissions. In interviews with hospital administrators, the authors found that hospitals responded to DRGs by cutting inventories, reducing administrative overhead, and reducing staff through attrition. However results from New Jersey may not be generalizable to Massachusetts, since New Jersey was under an all-payer prospective payment system.

Access

Senator John Heinz, Chairman of the Special Committee on Aging, stated that flaws in Medicare reimbursement have limited access to care and might have reduced the quality of care of Medicare beneficiaries. (Heinz, 1986). In two staff reports of the Senate Special Committee on Aging, multiple access and quality problems for Medicare beneficiaries were identified. (Special Committee on Aging, Sept. 1985 and Oct. 1985).

- o A Committee staff report and testimony given before the Committee on September 26, 1985 established that many seriously ill Medicare patients were being inappropriately and prematurely discharged under PPS.

- o Since implementation of PPS there has been a 40% increase in discharges to skilled nursing facilities and a 37% increase in discharges to home health care.

- o The increasing demand on nursing homes to care for Medicare patients has reduced the already insufficient supply of beds available to non-Medicare patients.

- o Significant cutbacks and redefinitions in the Medicare home health benefit have resulted in an increased demand on families, most of whom are ill-prepared to provide care for recently discharged and severely ill patients.

- o Many hospitals have invested insufficient resources in discharge planning. According to a national survey of hospital discharge planners, caseloads since PPS has risen faster than resources and, as a result, necessary follow-up of patients has suffered.

- o Federal rules designed to ensure appropriate discharge planning, though already lax, are scheduled for deregulation.

The General Accounting Office (GAO) uncovered a number of incidents of premature discharge and of discharge without adequate provision or post-hospital care. In addition, the GAO reported that the demand for post-hospital care has increased and that patients requiring post-hospital services are generally in poorer states of health and require more intensive services after discharge. (Chelimsky, 1986).

The GAO conducted a survey of a discharge planners in 985 Medicare-certified hospitals to determine the impact of PPS on the difficulty of planning for post-hospital services. Among their findings were:

- Most discharge planners responded that there were one or more barriers to placing Medicare patients for post-hospital care.
- The most frequently cited barrier to the placement of Medicare patients was Medicare rules and regulations.
- Discharge planners believe that access to post-hospital care today is more difficult than it was in 1982. (U.S. GAO, 1987).

ProPAC reported that the number of hospital closures in the U.S. increased slightly since the implementation of PPS, but it appears that these hospitals were in financial difficulty prior to PPS. It was noted that the affect on access to health care due to hospital closures was not determined by the Commission. Forty percent of the closures were in non-metropolitan areas where the impact of hospital closures on access would be more severe than in metropolitan areas having a greater array of health care services. (ProPAC, 1987).

Quality of Care

Thus far, only anecdotal evidence is available that PPS might be affecting the quality of health care for Medicare patients. In a survey conducted by the American Medical Association, 63% of those physicians responding felt that the quality of hospital care for the elderly had deteriorated or will deteriorate as a result of PPS. (Champlin, 1985).

An informal survey of its members conducted by The American Society of Internal Medicine to evaluate the impact of DRGs on patient care found that 43% of the 246 responding physicians viewed pressures to discharge patients because of DRGs as detrimental to the quality of patient care. Eighty-one physicians responded that hospitals pressured them to readmit patients. A number of internists were concerned "that DRGs could lead to under-utilization of certain tests and procedures. (American Society of Internal Medicine, 1985).

Health Economics Research, Inc. surveyed over 4,000 physicians to determine their perceptions regarding PPS. (Health Economics Research, 1985). An overview of their findings reveals the following: (1) 89% of radiologists, anesthesiologists and pathologists and 83% of all other physicians surveyed said that they were encouraged to change their practice patterns. The most

common encouragement was to discharge patients sooner and to shift testing from inpatient to outpatient setting; (2) physicians were encouraged to reduce ancillary costs; (3) 13% of the surveyed physicians reported that that they were encouraged to admit fewer Medicare patients, while 3% reported that they were encouraged to admit more Medicare patients.

Another report by Health Economics Research, Inc. reviewed newspaper articles and letters from Medicare beneficiaries and interviewed providers, PRO representatives, and consumer advocates to determine the perceived effects of PPS on quality. They found that four major themes continually surfaced during their investigation (see Health Economics Research, 1985):

(1) Patients are being discharged "quicker and sicker";

(2) Medicare beneficiaries misunderstand many aspects of PPS and their Medicare benefits;

(3) Alternative care may not be accessible or available;

(4) There is some question regarding the PRO's ability to identify poor quality.

The Northwest Oregon Health Systems Agency conducted an evaluation of five DRGs to determine "Dependency at Discharge" in patients studied prior to PPS and post PPS. In the 2,622 charts that they reviewed, they found that the average dependency rating was significantly higher in patients studied post PPS than patients in the pre-PPS period. Also, they found that the length of stay for all DRGs studied significantly decreased in the post PPS period. Not surprisingly, they found an increase in home health referrals in the post PPS period. (Coe et al., 1986). Because their population included only four hospitals in the Oregon area, their study is not generalizable but is an effective start at attempting to evaluate PPS from a health care outcome perspective.

A crude indicator of the quality of care is the rate of readmissions. A report conducted by the Commission on Professional and Hospital Activities found that readmission rates did not significantly increase following the introduction of PPS. Other results from their study include: (1) The number of discharges and length of stay for Medicare patients dropped following the introduction of PPS; (2) The percentage of Medicare patients using ICUs and CCUs dropped in 1984. (Commission on Professional and Hospital Activities, 1985).

The Inspector General of DHHS found in a study of 3,549 potential problem cases, that 2,907 (82%) patients were prematurely discharged and were inappropriately transferred in 491 cases. In addition, 60% of the cases reviewed suggested poor quality of care ranging from minor to major quality problems. (Kusserow, 1986).

Although scientific evidence concerning the effects of PPS on the quality of health care is limited, a number of research projects currently in progress may provide more definitive answers. For example, the Commission on Professional and Hospital Activities is analyzing data from pre and post-PPS periods to test hypotheses

regarding changes in quality-related utilization and process activities, such as the proportion of patients discharged to home health agencies and to SNFs. The University of Colorado Health Services Research Department is developing pre- and post-PPS comparisons on the condition of patients receiving home health services and residing in nursing homes. (U.S. GAO, 1986). Major national studies include those by the Rand Corporation, Abt Associates of Cambridge, and the Institute of Medicine at the National Academy of Sciences. Because the reports are not yet completed, we will be reporting on those studies of quality of care in the final report to the legislature in March 1988.

The Department's survey of hospitals to determine the impact of PPS on access and quality of care relied heavily on the results from other studies in the formulation of specific research hypotheses. The discussion section which follows describes important issues emerging from the survey as well as the need for additional studies to evaluate the impact of PPS on access and quality.

DISCUSSION

Medicare PPS was implemented in Massachusetts during a time when profound changes were occurring in the health care sector. In Massachusetts the number of days the average patient spent in the hospital was decreasing, and hospital occupancy rates were declining at a rate of 2-5% a year. Managed health care utilization and HMO enrollment were increasing; new HMOs and PPOs were forming; and 30-40% of the surgery was being performed in outpatient settings. (MHA Background Paper, 1986).

This preliminary report on the Evaluation of PPS, raises a number of concerns regarding access and quality of care afforded Medicare beneficiaries. The problems documented by other researchers and public agencies as well as our own hospital survey suggest that although the various problems discussed in this report are not new and may in fact have occurred prior to the implementation of PPS in Massachusetts, these problems may be exacerbated under the present DRG reimbursement system.

Important Issues Emerging from the Hospital Survey

Quality and Access

Initially Medicare provided security for the elderly in coping with the high costs of health care. In this era of cost containment and competition, the unfounded fear regarding hospitalization may be: "what if my DRG is up?" At one time medical care involved treatment at the physician's office or the hospital, but today our nation's elderly are faced with a confusing array of health care services.

Our survey findings as well as reports from other states demonstrate that hospitals have reacted to the incentives of DRG reimbursement; patients are discharged earlier and many unnecessary hospital tests and procedures have been eliminated. (ProPAC, 1987). Hospitals have made improvements in patient education, primarily in using audiovisual aids and in hiring nurse educators. In addition, hospitals reported that they have added Geriatric Assessment Units and have increased the size of their discharge planning staff which should result in improved case management of Medicare patients. Indications are that the Medicare program, primarily due to DRG reimbursement, has decreased its expenditures for inpatient care. (ProPAC, 1987). However, the locus of care has only shifted to alternative treatment sites along with a much greater dependence on other non-hospital based services. This shifting of services has in effect created a "Catch-22" situation, whereby the programs and services that are needed are seriously inadequate due to lack of funding, trained personnel, and limits on supply.

According to Rehr, "care continues to be episodic, fragmented, and depersonalized." (Rehr, 1986). One hospital administrator put it this way - "the increased pressure to discharge sick, frail, elderly people to inadequate numbers of nursing home beds or to [their] home with inadequate resources to cope with daily living has increased the level of anger, tension, and frustration among

health care providers and the elderly community." A discharge planner at one hospital underscored this dilemma - "Medicare never provided convalescent care for patients. Patients are just beginning to understand that they recover at home. Under PPS, this must be emphasized. The home care provided is limited and frustrations exist for the patient, hospital, and all [the] care-givers community and hospital." Nearly all hospital administrators and a large number of nursing department administrators report that inpatients are sicker and generally require more care when they are hospitalized now as compared with the pre-PPS period. Both hospital administrators and nursing administrators attributed this change to the general aging of the Medicare population and to the shift in the treatment of less ill patients in the ambulatory care setting. Discharge planners reported that patients are discharged with a greater need for post-hospital care due to the patients being sicker and discharged earlier as a result of PPS.

Earlier discharge of patients may only represent a quality problem when there is no "safety net" to care for the patient following discharge from the hospital. One vice-president for nursing felt that "methods used to screen patients and to limit their length of stay in the hospital compromises the quality of patient care. Home care is insufficient to meet the needs of the elderly population on a 24-hour a day basis." A nursing administrator at another hospital concluded that "... access to care is a concern of many patients and families who are treated in the Emergency Department and are seeking admission. In some instances, the nurses as well have expressed concern regarding the ability of the patient to be cared for in the home. While it has become increasingly difficult to get admitted to the hospital, it does not appear that community support or home care services have increased sufficiently to appropriately support sicker people who must remain at home, especially the older person."

Discharge planners have also reported that supplies of nursing home beds and home care services were inadequate. As a result, placing patients in nursing homes has become increasingly difficult since 1981. In addition, discharge planners reported increasing difficulty in arranging home health care for discharged patients. Ironically, discharge planners viewed Medicare rules and regulations as the major barrier to arranging for home health care services. Also, slightly more than half of the discharge planners who follow-up on patients were not satisfied that patients were receiving the post-hospital care services that were initially planned. One discharge planner felt "there are clearly gaps in the institutional and home care services and inadequate regulations of quality in extended care facilities and home care services."

The elderly have special social needs related to health, such as the need for transportation, proper housing, and other support services. Our evaluation indicated that the majority of discharge planners felt that homemaker services for the Medicare population were seriously inadequate and nearly half felt that the supply of adult congregate housing was inadequate. Given the current wage rates paid to homemakers, it is not surprising that the supply of homemaker services was perceived as inadequate.

Limitations

The major limitation inherent in any evaluation of the impact of PPS on access and quality in Massachusetts is that DRG reimbursement has been implemented for only a relatively short period of time (Non-municipal hospitals were surveyed one year into PPS, and municipals were surveyed only 6 months into PPS). If one assumes that hospital behavior is driven by reimbursement, a change in hospital management practices may be evident only after the system has been in place for awhile -e.g., after the first year of PPS. Thus, our survey of hospitals may not reflect changing hospital practices, simply because it may be too early for a thorough evaluation. Clearly the response of hospitals to PPS may depend on their profit margins: some may be DRG "winners" and some, DRG "losers". Our survey of hospitals may reflect this observation.

Most of the data collected in the survey of hospitals were based upon perceptions of individuals within three departments of the hospital. We asked respondents to consult in-house data sources in answering the questionnaire whenever possible. Nevertheless, the data no doubt reflects some reporting bias on the part of the respondents, and caution must be exercised in interpreting the data. This is especially true of information requested for a five year period, if for example, the respondent had been employed with the hospital for less than five years. Secondly, information regarding utilization trends in the case of shorter patient stays or the decrease in inpatient admissions should not be interpreted as appropriate or inappropriate, since it was based upon statistical data and observation which has not been clinically validated. A third caveat is that the responses to the survey may depend on the particular department completing the form. Medical staffs, for example, might have responded very differently than administrators to open-ended questions about quality. The survey results therefore may reflect individual perceptions and not true patterns within the hospital industry. We will be able to confirm some of the reported data through analysis of hospital discharge data.

Need for Further Studies

The Department's survey evaluated acute care providers that receive reimbursement under DRG payment. Even though non-acute providers are not reimbursed under the present DRG reimbursement system, there is serious interest at the federal level in developing prospective payment systems for both nursing home care and home health care. It is apparent from our survey of hospitals that these providers will likely be affected by PPS if patients are discharged "sicker and quicker " from hospitals. Thus, additional studies evaluating the impact of PPS should address changes in access and quality of care for patients upon discharge from the hospital. Such studies might address the following:

- How does PPS affect the number of facilities needed to supply an adequate level of post-hospital services?

- o Has the general health and functional status of patients in long term care facilities deteriorated since the implementation of PPS?

- o Do patients in nursing homes require more complex services since PPS?

- o Are Medicare patients discharged since PPS incurring more out-of-pocket expenses for post-hospital care?

- o How has the utilization of home health agencies by Medicare patients changed since the implementation of PPS and are there areas within Massachusetts that require more home health agencies?

- o How should quality of care be evaluated for home health agencies?

The Department is using hospital discharge data to determine whether the rate of discharge to home with home health care and to long term care is significantly higher after PPS. Also, we are studying whether the rate of hospital readmissions has increased post-PPS. Secondly, the Department is studying whether the health and functional status of Medicaid nursing home patients, as measured by Activities of Daily Living and other indicators, has changed for patients discharged since PPS. Results of these two additional studies will be reported to the legislature by March 1988.

SELECTED REFERENCES

Aiken, Linda H. and Bays, Karen D. "Special Report The Medicare Debate-Round One." New England Journal of Medicine 311, 18 (1984):1196-1200.

American Society of Internal Medicine. The Impact of DRGs on Patient Care: Survey by the American Society of Internal Medicine," March 1984 - October 1985, Washington, D.C.: American Society of Internal Medicine, 1985.

Anderson, Gerard and Steinberg, Earl. "To Buy or Not to Buy: Technology Acquisition Under Prospective Payment." New England Journal of Medicine 311,3 (1984):182-185.

Baldwin, Mark F. "Lawmakers Focus on Hospital-DRG Squeeze." Modern Health Care. (March 29, 1985):54-58.

Bayer, Ronald and Callahan, Daniel. "Medicare Reform: Social and Ethical Perspectives." Journal of Health Politics, Policy and Law 10, 3 (1985):533-545.

Bishop, Yvonne., Feinberg, Steven, and Holland, Paul. Discrete Multivariate Analysis: Theory and Practice. MIT Press, Cambridge, Massachusetts, 1975.

Blumenthal, David, Schlesinger, Mark, Drumhells, Pamela B., et al. "Special Report: The Future of Medicare." New England Journal of Medicine 314, 11 (1986):722-728.

Butler, Peter W., Bone, Roger C. and Field, Tina. "Technology Under Medicare Diagnosis-related Groups Prospective Payment: Implications for Medical Intensive Care." Chest 87 (1985):229-234.

Champlin, Leslie. "DRGs: Putting the Squeeze on Your Older Patients?" Geriatrics 40, 7 (1985):77-80.

Chassin, Mark R. "Quality of Care and Medicare's Prosepective Payment System." Statement to U.S. Senate, June 3, 1986.

Chelimsky, Eleanor. Quality of Care Issues in the Medicare Program, Testimony to U.S. Senate, June 3, 1986.

Coe, Merilyn, Wilkinson, Ann, and Patterson, Patricia. Preliminary Evidence on the Impact of DRGs Dependency at Discharge Study. Northwest Oregon Health Systems. Beaverton, OR., May, 1986.

Commission on Professional and Hospital Activities. The Impact of the Prospective Payment System on the Quality of Care: Report of Preliminary Findings. Ann Arbor, MI., CPHA, November 1985.

Fineberg, Harvey V. and Hiatt, Howard H. "Evaluation of Medical Practices: The Case for Technology Assessment." New England Journal of Medicine 301, 20 (1979):1086-1090.

Gornick, Marian, Greenberg, Jay N. Eggers, Paul W. and Dobson, Allen. "Twenty Years of Medicare and Medicaid: Covered Populations, Use of Benefits, and Program Expenditures." Health Care Financing Review (1985) Annual Supplement.

Graham, Judith. "New York, Massachusetts Face Uncertainty in Switch to PPS." Modern Health Care (February 14, 1986):94-95.

Gutterman, Stuart and Dobson, Allen. "Impact of the Medicare Prospective Payment System for Hospitals." Health Care Financing Review 7 (1986):97-114.

Health Economics Research, Inc. Physicians' Perceptions About the Short-Run Impact of Medicare's Prospective Payment System. Boston, MA., HER, Inc. November 14, 1985.

Health Economics Research, Inc. Background Research on the Effects of Medicare PPS on Quality of Care and Development of a Case Study of the Effects of Shift of Services on Quality of Care: Executive Summary. Boston, MA. HER, February 7, 1986.

Heinz, John. "The Effects of DRGs on Patients." Business and Health (July/August 1986):17-20.

Hsaio, William, Saplolsky, Harvey, Dunn, Daniel L., and Weiner, Sanford. "Lessons from the New Jersey DRG Payment System," Health Affairs.5:2 (Summer 1986):32-43.

Inglehart, John K. "Early Experience With Prospective Payment of Hospitals." New England Journal of Medicine 314, 22 (1986):1460-1464.

Iglehart, John K. "Medicare Begins Prospective Payment of Hospitals." New England Journal of Medicine 308, 23 (1983):1428-1432.

Jacobs, Lenworth M. and Schwartz, Robert J. "The Impact of Prospective Reimbursement on Trauma Centers." Archives of Surgery 121 (1986):479-483.

Kusserow, Richard, P. Inspection of Inappropriate Discharges and Transfers. Report by Inspector General, Office of Analysis and Inspections, DHHS, Chicago, Ill., March 1986.

Lohr, Kathleen N. Brook, A. Robert H., Goldberg, George A et al. Impact of Medicare Prospective Payment on the Quality of Medical Care: A Research Agenda. Rand Report Prepared for Health Care Financing Administration. March 1985.

Long, Stephen H. and Settle, Russel F. "Medicare and the Disadvantaged Elderly; Objectives and Outcomes." Milbank Memorial Fund Quarterly 62, 4 (1984):609-654.

Luft, Harold S., and Hunt, Sandra. "Evaluating Individual Hospital Quality through Outcome Statistics," Journal of the American Medical Association 255, 20, (1986):2780-2784.

Massachusetts Hospital Association. "The Medicare Prospective Payment System." Management and Policy Brief, Burlington, Ma., MHA, January 1986.

Massachusetts Hospital Association. Environmental Assessment 1986-1991: A Comprehensive Background Paper for Hospitals as They Plan for the Next Five Years. MHA, Burlington, MA., March 1986.

Omenn, Gilbert S. and Conrad, Douglas A. "Implications of DRGs for Clinicians." New England Journal of Medicine 311, 20 (1984):1314-1317.

Office of Technology Assessment. Medicare Prospective Payment System: Strategies for Evaluating Cost, Quality and Medical Technology, Government Printing Office, Washington D.C., October 1985.

Prospective Payment Assessment Commission. Medicare Prospective Payment and the American Healthcare System: Report to the Congress, ProPAC, Washington, D.C., February 1987.

Rehr, Helen. "Discharge Planning" An Ongoing Function of Quality Care," QRB, (February, 1986), 47-50.

Riley, Gerald and Lubitz, James. "Outcomes of Surgery among the Medicare Aged; Surgical Volume and Mortality." Health Care Financing Review 6, (1985):37-41.

Rosko, Micheal and Broyles, Robert W. "Short Term Responses of Hospitals to the DRG Prospective Pricing Mechanism in New Jersey." Medical Care 25, 2, (February 1987): 88-99.

Shwartz, Michael, Merrill, Jeffrey, and Klebanoff, Lily. "DRG-Based Case Mix and Public Hospitals." Medical Care 22, 4, (1984):283-299.

Stern, Robert and Epstein, Arnold. "Institutional Responses to Prospective Payment Based on Diagnosis-Related Groups: Implications for Cost, Quality, and Access." New England Journal of Medicine 312, 10 (1985):621-627.

Thomas, Frank, Larsen, Keith, Clemmer, Terry P. et al. "Impact of Prospective Payments on a Tertiary Care Center Receiving Large Numbers of Critically Ill Patients by Aeromedical Transport." Critical Care Medicine 14, 3 (1986):227-230.

U.S. General Accounting Office. Post-Hospital Care: Discharge Planners Report Increasing Difficulty in Placing Medicare Patients, Washington, D.C., GAO, January 1987.

_____. Post-Hospital Care: Efforts to Evaluate Medicare Prospective Payment Effects are Insufficient. Washington, D.C., GAO, June 1986.

Special Committee on Aging. Impact of Medicare's Prospective Payment System on the Quality of Care Received by Medicare Beneficiaries, U.S. Senate, Washington, D.C. September 26, 1985.

_____.Impact of Medicare's Prospective Payment System on the Quality of Care Received by Medicare Beneficiaries, U.S. Senate, Washington, D.C., October 24, 1985.

Wennberg, John E., McPherson, Klim and Caper, Philip. "Will Payment Based on Diagnosis-Related Groups Control Hospital Costs?" New England Journal of Medicine 311, 5 (1984):295-300.

Zuckerman, Alan M. "The Impact of DRG Reimbursement on Strategic Planning." Hospital and Health Services Administration (July/August 1984):40-49.

TABLE 1

Characteristics of Responding Hospitals

		No. (n=94)	(%)
Status:	Teaching or Medical School Affiliation	30	31.9
	Non-Teaching	64	68.1
Type:	Municipal	9	9.6
	Non-Municipal	85	90.4
Size:	Small (less than 100 beds)	17	18.1
	Medium (100-300 beds)	50	53.2
	Large (300 +)	27	28.7
Location:	HSA I	14	14.9
	HSA II	15	16.0
	HSA III	7	7.4
	HSA IV	32	34.0
	HSA V	15	16.0
	HSA VI	11	11.7

TABLE 2

Hospital Census For All Payers

	------ All Hospitals ------		------ Non-Municipal -------	
	ALOS (n=85)	Occupancy* (n=77)	ALOS (n=77)	Occupancy* (n=69)
FY 1982	8.60	79.23	8.56	79.34
FY 1983	8.46	77.29	8.41	77.44
FY 1984	8.27	73.72	8.21	73.55
FY 1985	8.19	68.40	8.13	68.10
FY 1986	7.59	62.78	7.52	62.30

*The occupancy rate is based on the unweighted average of occupancy figures as reported by each hospital. The number of beds for each hospital for the period FY82 to FY86 was not available in order to compute an adjusted occupancy rate.

TABLE 3

Factors Associated with a Decline in

Hospital Occupancy Between FY82 and FY86

According to Administrators of Nonmunicipal Hospitals

	N	Mean Score*	S.D.
1. Shift to Outpatient Treatment	62	4.16	.91
2. Medicare DRG Reimbursement	60	3.75	1.05
3. HMO Programs	60	2.95	1.05
4. Other Cost Containment Programs	54	2.87	1.01
5. Improvements in Medical Technology	57	2.81	.87
6. Competition from Other Hospitals	58	2.57	1.10
7. Chapter 372	54	2.39	.96

* ($N=49$, $F=25.09$ $p<.001$, $d.f.= 6, 288$)
From Repeated Measures Analysis of Variance)

TABLE 4

Factors Related to Increasing Physician Profiling

According to Hospital Administrators

	N	Mean Score*	S.D.
1. Medicare DRG Reimbursement	62	4.24	.90
2. PRO Review	62	3.72	1.08
3. HMO Programs	59	2.86	1.07
4. Shift to Outpatient Treatment	57	2.81	1.14
5. Other Cost Containment Programs	54	2.83	1.33
6. Chapter 372	57	2.72	1.01
7. Competition from Other Hospitals	57	2.63	1.10
8. Malpractice Climate	56	2.61	1.14
9. Improvements in Medical Technology	53	2.21	1.01

* ($N=48$, $F=18.45$, $p<.001$, $d.f.=8, 376$)
From Repeated Measures Analysis of Variance

TABLE 5

Year Associated with A Change in the Size of Nursing Staff

	Increase		Decrease		No Change	
	N	%	N	%	N	%
FY 82	0		2	(3.1)	0	
FY 83	2	(18.2)	8	(12.3)	0	
FY 84	2	(18.2)	5	(7.7)	0	
FY 85	2	(18.2)	18	(27.7)	0	
FY 86	3	(27.3)	26	(40.0)	0	
FY 87 to date	1	(9.1)	2	(3.1)	0	
No year indicated	1	(9.1)	4	(6.2)	15	(100)
TOTAL ALL YEARS	11		65		15	
% Change All Years	12.1%		71.4%		16.5%	

TABLE 6

Change in Mix of Nursing Staff

	Nurses Aides		LPNs		RNs		Support Staff	
	N	%	N	%	N	%	N	%
Increase	13	(15.5)	2	(2.4)	42	(50.0)	12	(16.7)
Decrease	55	(65.5)	62	(73.8)	32	(38.1)	43	(59.7)
No Change	16	(19.0)	20	(23.8)	10	(11.9)	17	(23.6)
TOTAL	84		84		84		72	

TABLE 7

Factors Associated with a Decrease in

Nursing Staff According to Nursing Administrators

Factor	N	Mean Score*	S.D.
1. Changing Length of Stay	63	3.75	1.18
2. Changing Number of Admissions	64	3.58	1.32
3. Medicare DRG Reimbursement	60	3.53	1.21
4. Shift to Outpatient Treatment	62	3.48	1.28
5. Chapter 372	60	3.28	1.12
6. Nursing Labor Supply	62	3.10	1.63
7. Other Cost Containment Programs	62	3.03	1.16
8. Competition from Other Hospitals	57	2.53	1.17
9. Change in the Number of Hospital Beds	60	2.40	1.50
10. PRO Review	55	2.27	1.08
11. HMO Programs	57	2.21	.99
12. Improvements in Medical Technology	61	2.11	.91
13. Temporary Nursing Help	61	1.56	.90

* ($N=40$, $F= 16.94$, $p<.001$, d.f.=12, 468)
From Repeated Measures Analysis of Variance

Table 8

Hospital Administrators and Nursing Adminstrators

Rating of Changes in the Level of Patient Acuity

	Hospital Administrators (n = 88)					Nursing Administrators (n=92)				
	Increase in Acuity		Decrease in Acuity		N.C.	Increase in Acuity		Decrease in Acuity		N.C.
	N	%	N	%		N	%	N	%	
FY 82	0	--	0		--	0		0		--
FY 83	2	(2.5)	1	(50.0)	--	2	(2.4)	0		--
FY 84	7	(8.8)	0		--	7	(8.2)	1	(100)	--
FY 85	19	(23.8)	0		--	29	(34.1)	0		--
FY 86	40	(50.0)	1	(50.0)	--	34	(40.0)	0		--
FY 87 to date	5	(6.3)	0		--	3	(3.5)	0		--
No year indicated	7	(8.8)	0		6(100)	10	(11.8)	0		6 (100)
ALL YEARS	80		2		6	85		1		6
Total % change	90.9%		2.3%		6.8%	92.4%		1.1%		6.5%

(--) : Indicates year was not applicable to this response.

NC = No Change

FIGURE 2

YEAR IN WHICH THE INCREASE IN ACUITY WAS MOST SIGNIFICANT

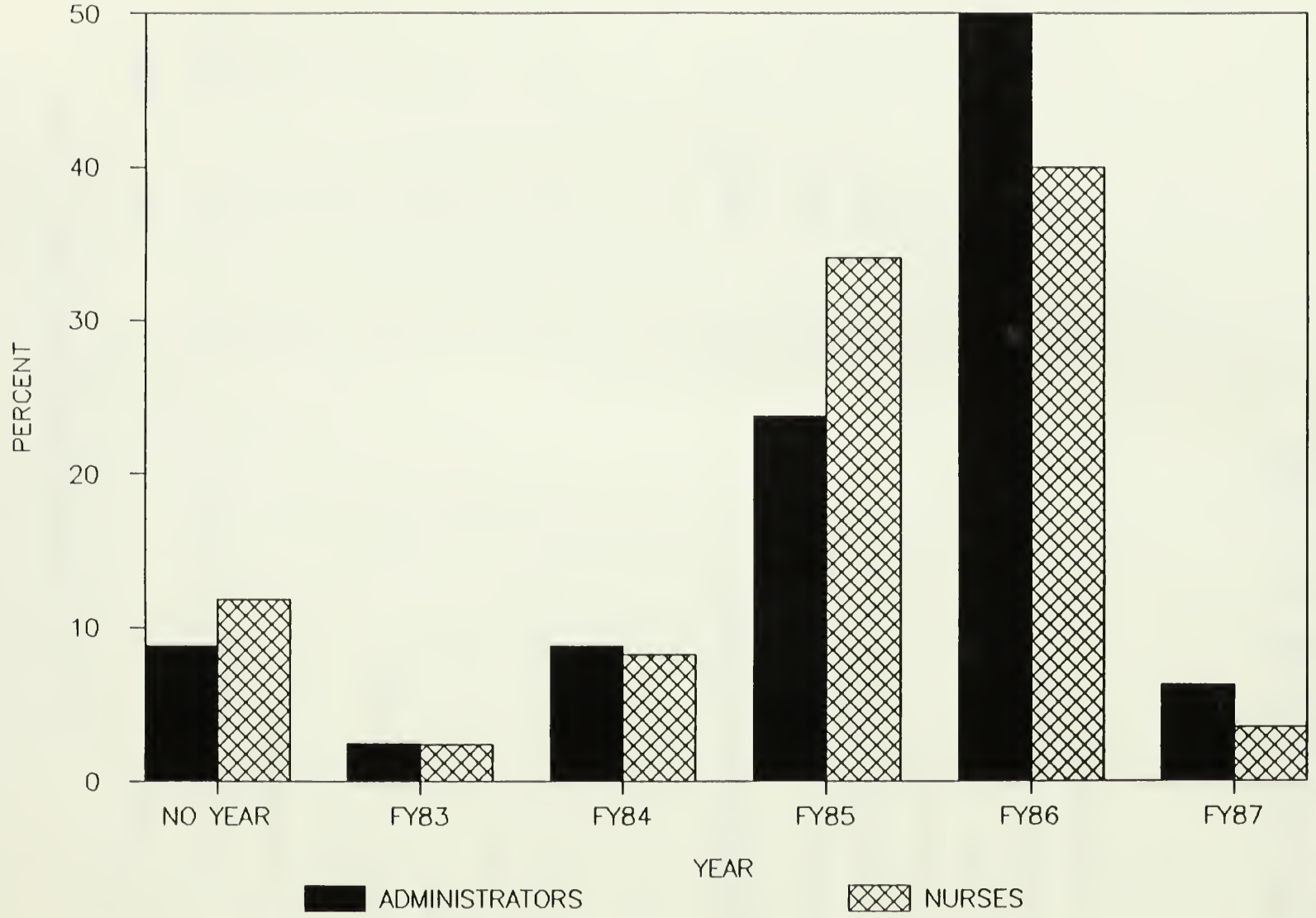


TABLE 9

Factors Associated with an Increase in Patient Acuity

According to Hospital and Nursing Administrators

Administrators	N	Mean*	S.D.
1. Increase in Outpatient Services	79	4.27	.86
2. Aging Population	79	3.73	1.02
3. Medicare PPS	77	3.66	1.23
4. Medical Technology	74	3.11	1.09
5. PRO	74	3.09	1.20
6. Chapter 372	76	2.71	1.09
7. Transfers	76	2.42	1.20

Vice Presidents for Nursing	N	Mean**	S.D.
1. Increase in Outpatient Services	84	4.54	.70
2. Aging Population	84	3.82	.92
3. Medicare PPS	84	3.75	.99
4. Chapter 372	78	3.04	1.07
5. Medical Technology	85	3.01	.95
6. Transfers	82	2.12	1.25

* (N=63, F=23.74, p<.001, d.f.=6, 372)
**(N=74, F=63.36, p<.001, d.f.=5, 365)
From Repeated Measures Analysis of Variance

Table 10

Need for Post Hospital Services

According to Discharge Planners

	Increased Need		Decreased Need		No Change/ No Trend	
	N	(%)	N	%	N	%
FY 82	0	(0)	0		--	
FY 83	1	(1.4)	0		--	
FY 84	11	(15.1)	1	(20.0)	--	
FY 85	10	(13.7)	3	(60.0)	--	
FY 86	34	(46.6)	1	(20.0)	--	
FY 87 to date	4	(5.5)	0		--	
No year indicated	13	(17.8)	0		13	(100)
TOTAL ALL YEARS	73		5		13	
% Change All Years	80.2%		5.54%		14.3%	

(--) : indicates year was not applicable in a response of "no change".

TABLE 11

Change in the Need for Post Hospital Services by HSA

According to Discharge Planners

	HSA (Hospitals Grouped within their HSA)											
	I		II		III		IV		V		VI	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Increase	10	(71.4)	10	(76.9)	6	(85.7)	27	(84.4)	11	(73.3)	9	(90.0)
Decrease	1	(7.1)	1	(7.7)	---		1	(3.1)	1	(6.7)	1	(10.0)
No Change/ No Trend	3	(21.4)	2	(15.4)	1	(14.3)	4	(12.5)	3	(20.0)	---	

TABLE 12

Change in the Number of Patients Needing Post Hospital Services

According to Discharge Planners

HSA (Hospitals grouped within their own HSA)	SNFs			Rehab.			Home Health			Intermediate Care			Homemaker		
	Inc.	Dec.	NC	Inc.	Dec.	NC	Inc.	Dec.	NC	Inc.	Dec.	NC	Inc.	Dec.	NC
I	8	-	2	8	-	3	10	-	1	6	3	2	9	-	1
II	9	2	2	6	1	5	11	1	2	5	3	3	12	1	1
III	4	1	2	3	-	4	6	-	-	2	-	5	5	-	1
IV	24	2	3	22	2	5	27	-	2	20	3	5	25	1	3
V	13	-	-	7	1	5	12	1	-	9	-	4	12	-	1
VI	9	1	-	4	1	5	8	-	2	4	1	5	9	-	1
TOTAL NUMBER OF HOSPITALS RESPONDING	67	6	9	50	5	27	74	2	7	46	10	24	72	2	8

Inc.= increase
Dec.= decrease
NC = no change

TABLE 13

Factors Associated with an Increase in the Need for Post Hospital Services According to Discharge Planners

	N	Mean	S.D.
1. Aging of the Population	73	4.32	.88
2. Increased Acuity	72	4.04	1.09
3. Change in Length of Stay	73	4.03	1.15
4. Medicare PPS	72	4.01	1.11
5. Improvements in Technology	69	3.32	1.06
6. Change in Patient Expectations	68	3.06	1.20
7. Chapter 372	68	2.69	1.16

* ($N=60$, $F=22.54$, $p<.001$, d.f.=6, 354)
From Repeated Measures Analysis of Variance

TABLE 14

The Adequacy of Supply of Post Hospital Facilities

According to Discharge Planners

	N	Mean	S.D.
1. SNFs	91	4.29	.90
2. Homemaker Services	92	3.85	1.16
3. Respite Care	90	3.72	.98
4. Adult Congregate Living	77	3.43	1.25
5. Intermediate Care	91	3.43	1.10
6. Home Health Care	92	3.11	1.28
7. Hospice	91	2.75	1.29
8. Adult Day Health	91	2.47	.98
9. Rehabilitation Centers	94	2.20	1.12

* (N=74, F=1.70 , p<.096 , d.f.=8, 584)
From Repeated Measures Analysis of Variance

TABLE 15

Adequacy of the Supply of Post Hospital Services

According to Discharge Planners

HSA (Hospitals grouped within their HSA)	SNFs			Rehab.			Home Health			Adult Cong. Living			Intermediate Care			Homemaker			Hospice			Respite Care			Adult Day Health Care		
	A	M	I	A	M	I	A	M	I	A	M	I	A	M	I	A	M	I	A	M	I	A	M	I	A	M	I
I	1	6	6	8	3	3	5	3	6	3	5	3	3	3	8	2	2	10	5	3	5	2	5	7	10	2	1
II	-	1	12	5	6	4	5	5	4	5	1	8	2	4	8	3	4	7	6	2	5	2	3	8	7	4	3
III	1	-	6	7	-	-	3	1	3	1	5	1	1	3	3	1	1	5	3	1	3	-	2	5	4	2	1
IV	1	2	29	28	4	-	10	5	17	5	3	17	8	13	10	5	4	22	21	4	7	5	8	17	19	12	1
V	-	1	14	7	4	4	4	2	8	1	3	8	3	3	9	2	4	9	7	5	3	1	3	11	5	5	4
VI	-	2	9	8	2	1	7	1	3	2	2	4	1	3	6	1	3	7	5	5	1	-	5	6	8	2	1
TOTAL HOSPITALS	3	12	76	63	19	12	34	17	41	17	19	41	18	29	44	14	18	60	47	20	24	10	26	54	53	27	11
%	3.2			67.0			37.0			22.1			20.0			15.2			51.6			11.1			58.2		
		13.2			20.2			18.5			24.7			31.9			19.6			22.0			28.9			29.7	
			83.5			12.8			44.6			53.2			48.4			65.2			26.4			60.0			12.1

The number of hospitals reporting the following:

A: Adequate level of services (rating of 1 or 2)
M: Marginal level of services (rating of 3)
I: Inadequate level of services (rating of 4 or 5)

Table 16

The Difficulty of Arranging Nursing Home Placement for Medicare Patients by Year According to Discharge Planners

	Greater Difficulty		Less Difficulty		No Change or No Trend	
	N	(%)	N	(%)	N	(%)
FY 82	2	(3.0)	0		--	
FY 83	4	(6.0)	0		--	
FY 84	6	(9.0)	1	(25.0)	--	
FY 85	10	(14.9)	0		--	
FY 86	23	(34.3)	0		--	
FY 87 to date	9	(13.4)	0		--	
No year indicated	13	(19.4)	3	(75.0)	21	(100)
TOTAL ALL YEARS	67		4		21	
% Change All Years	72.8%		4.3%		22.8%	

(--) : indicates year was not applicable in a response of "no change".

TABLE 17

Difficulty of Placing Medicare Patients

in Skilled or Intermediate Care Facilities by HSA

According to Discharge Planners

HSA

(Hospitals grouped within their HSA)

	I		II		III		IV		V		VI	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Increase	7	(50)	10	(66.7)	4	(57.1)	27	(87.1)	12	(80)	7	(70)
Decrease	---		1	(6.7)	1	(14.3)	---		1	(6.7)	1	(10)
No Change/ No Trend	7	(50)	4	(26.7)	2	(28.6)	4	(12.9)	2	(13.4)	2	(20)

TABLE 18

Barriers to Placing Patients in SNFs or ICFs

According to Discharge Planners

	N	Mean	S.D.
1. Availability of SNFs	66	4.65	.67
2. Need for Heavy Care	67	4.58	.72
3. Need for Complex Services	66	4.56	.81
4. Medicare Rules	66	3.89	1.07
5. Medicaid Rules	66	3.70	1.25
6. Availability of Intermediate Care	67	3.64	1.08
7. Decreasing LOS	64	3.42	1.27
8. Social Situation	67	3.36	1.11
9. Legal Situation	67	3.30	1.22

* ($n=62$, $F=22.60$, $p<.001$, $d.f=8, 488$)
From Repeated Measures Analysis of Variance

Table 19

Changes in the Difficulty of Arranging Home Care for Medicare Patients According to Discharge Planners

	Greater Difficulty		Less Difficulty		No Change/ No Trend
	N	%	N	%	
FY 82	0	--	0		--
FY 83	2	(2.7)	2	(20.0)	--
FY 84	6	(8.2)	2	(20.0)	--
FY 85	14	(19.2)	3	(30.0)	--
FY 86	31	(42.5)	1	(10.0)	--
FY 87 to date	7	(9.6)	1	(10.0)	--
No year indicated	13	(17.8)	1	(10.0)	8
TOTAL ALL YEARS	73		10		8
% Change All Years	80.2%		11.0%		8.8%

(--) : indicates a year was not applicable in a response of "no change".

TABLE 20

Changes in Difficulty of Arranging for Home Care

According to Discharge Planners

HSA

(Hospitals grouped within their HSA)

	I		II		III		IV		V		VI	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Increase	14	(100)	11	(73.3)	4	(57.1)	25	(80.6)	11	(78.6)	8	(80)
Decrease	---		1	(6.7)	2	(28.6)	4	(12.9)	2	(14.3)	1	(10)
No Change/ No Trend	---		3	(20)	1	(14.3)	2	(6.5)	1	(7.1)	1	(10)

TABLE 21

Barriers to Arranging Home Health Care

As Perceived by Discharge Planners

	N	Mean	S.D.
Medicare Rules	70	4.56	.79
Need for Heavy Care	71	4.37	.93
Social Situation	71	3.83	1.08
Decreasing Length of Stay	69	3.75	1.23
Need for Complex Services	71	3.28	1.16
Medicaid Rules	68	2.53	1.18
Legal Situation	70	2.44	1.18

* ($N=63$, $F=48.83$, $p<.001$, $d.f=6, 372$)
From Repeated Measures Analysis of Variance

Table 22

Ratings of the Open-Ended Responses on the Impact of PPS on Quality and Access to Care at the Respondent's Hospital

	Quality of Care		Access to Care	
	Positive Effect	Negative Effect	Positive Effect	Negative Effect
Hospital Administrators	2	7	0	20
Nursing Administrators	2	4	0	14
Coordinators of Discharge Planning	4	8	1	10

THIS SECTION OF THE SURVEY SHOULD BE COMPLETED BY THE HOSPITAL ADMINISTRATOR/CEO OR HER/HIS REPRESENTATIVE.

Please note that in this survey, the fiscal year is defined as October to September for nonmunicipal hospitals and July to June for municipal hospitals. Also "PPS" Refers to the Medicare Prospective Payment System or DRG reimbursement.

BACKGROUND INFORMATION

Hospital Name_____ DPH#_____

1. What is your position? (please indicate)
_____

2. How long have you been in this position?(number of years)
_____

3. Does your hospital have a teaching affiliation?

1. ____ teaching hospital
2. ____ not a teaching hospital

4. How is your service area predominately characterized? (check one)

1. ____ urban .....
2. ____ suburban.....
3. ____ rural.....

5. How does the income of residents of your service area compare to the Massachusetts average? (check one)

1. ____ Below.....
2. ____ About average.....
3. ____ Above.....

6. In recent years, how has the population of your service area changed?

1.___ declined.....
2.___ constant.....
3.___ increased.....

7. In recent years, how has the over 65 population in your service area changed?

1.___ declined.....
2.___ constant.....
3.___ increased.....

Please answer question 8 using the listing of services in Attachment One at the end of section one.

Please indicate in the boxes below those major services you have added, supplemented, reduced, or eliminated in FY86 or plan to add, supplement, reduce, or eliminate in FY87. (Please list up to five services in each section using the codes in Attachment One).

	1	2	3	4	5
8.A. ADD					
B. SUPPLEMENT					
C. REDUCE					
D. ELIMINATE					

If you plan to add, supplement, reduce, or eliminate services that are not in attachment One, please list them below and circle the action you plan to take:

	Add	Supplement	Reduce	Eliminate
_____	A	S	R	E
_____	A	S	R	E
_____	A	S	R	E
_____	A	S	R	E
_____	A	S	R	E

9. Please indicate whether services on the following list have been added, supplemented, reduced, eliminated, or kept at the same level in FY86 or there are plans to produce a change in these services in FY87.

	ADDED SERVICE	SUPPLEMENTED SERVICE	NO CHANGE	REDUCED SERVICE	ELIMINATED SERVICE
Rehabilitation					
Skilled Nursing Care					
Other Long term Care					
Geriatric Assessment					
Home Care Program					
Hospice					
Occupational Therapy					
Physical Therapy					
Speech					
Recreation					
Social Work Services					
Patient Represent-ative Services					

10. Since fiscal year 1982, which of the following statements best characterizes the change in the severity of illness of patients in your hospital?

(1)___ No significant change since FY 82 (skip to question 13)

(2)___ There has been an overall <u>increase</u> in the severity of illness.

Please check below the single fiscal year in which this increase was most significant:

___ 1982	___ 1985
___ 1983	___ 1986
___ 1984	___ 1987 to date

(3)___ There has been an overall <u>decrease</u> in the severity of illness.

Please check below the single fiscal year in which this decrease was most significant.

___ 1982	___ 1985
___ 1983	___ 1986
___ 1984	___ 1987 to date

(4)___ There have been significant fluctuations with no overall net change.

Please describe this trend in terms of fiscal years:

_____
_____
_____
_____

11. Please indicate the significance of the following factors in affecting the change in the severity of illness. Please rate each factor according to the overall trend using following scale:

1 = not significant at all
2 = not very significant
3 = moderately significant
4 = significant
5 = very significant
9 = don't know

a. ___ More patients being treated in the outpatient setting (e.g. leading to sicker inpatient mix)
b. ___ Transfer of sicker patients to your institution
c. ___ Aging population
d. ___ Improvements in medical technology
e. ___ Medicare PPS (DRG reimbursement)
f. ___ Chapter 372
g. ___ Onset of PRO review
h. ___ Other, Please explain _____

12. For each factor that you rated a four or five above, please describe the way in which the factor has affected the severity of illness. Be sure to indicate the letter of factor or factors in your response. (Use additional sheets if necessary.)

Factor 1: _____
Factor 2: _____
Factor 3: _____
_____

13. Please indicate whether your hospital provides patients with any of the following information on the DRG reimbursement system beyond the information required by statute. Also indicate the point in the hospitalization during which such information is provided.

Please fill in the matrix below according to the following scales:

Under provide indicate if your institution provides the type of patient information specified:

1 = yes
2 = no

Under When indicate when your institution provides the patient information specified:

1 = Preadmission
2 = At time of admission
3 = During hospitalization
4 = At time of discharge

Type of information	Provide?	When?
a. Pamphlet	_____	_____
b. Personal explanation	_____	_____
c. Film or cassette	_____	_____
d. Other, specify	_____	_____

14. Since fiscal year 1982 which of the following statements best characterizes any change in the level of activity of profiling the practice patterns of physicians at your hospital(e.g. profiling by patient LOS, charges, ancillary utilization)?

(1)___ No change since FY 82 (skip to question 17)

(2)___ There has been an overall increase in the level of activity.

Please check below the single fiscal year in which this increase was most significant:

___ 1982 ___ 1985
___ 1983 ___ 1986

(3)___ There has been an overall <u>decrease</u> in the level of activity.

Please check below the single fiscal year in which this decrease was most significant.

___ 1982	___ 1985
___ 1983	___ 1986
___ 1984	___ 1987 to date

(4)___ There have been significant fluctuations with no overall net change.

Please describe this trend in terms of fiscal years:

_____
_____
_____

15. Which of the following factors have been significant in affecting the change in the level of activity of profiling the practice patterns of physicians? Please rate each factor overall according to the following scale:

1 = not significant at all
2 = not very significant
3 = moderately significant
4 = significant
5 = very significant
9 = don't know

a. ___ Chapter 372
b. ___ Competition from other hospitals
c. ___ HMO marketing
d. ___ Improvements in medical technology
e. ___ A shift to ambulatory care settings
f. ___ Medicare PPS (DRG reimbursement)
g. ___ Onset of PRO review
h. ___ Cost containment programs other than noted above
i. ___ Malpractice climate
j. ___ Other (Specify)_____

16. For each factor that you rated a four or five above, please describe the way in which the factor affected the policy of profiling the practice patterns of physicians. Please indicate the letter of factor in your response.(Use additional sheets if necessary.)

Factor 1: _____
_____
_____
_____

Factor 2: _____
_____
_____
_____

Factor 3: _____
_____
_____

17. Please indicate if you have delayed the purchase of any major piece of medical equipment (i.e. a capital expenditure greater than four hundred thousand dollars) during FY 86 or FY 87 to date and the reasons for the delay.

_____ (yes=1, no=2)

If yes, please explain
_____
_____
_____

HOSPITAL STATISTICS

18. Please list the total licensed beds at your institution

	FY1985	FY1986
TOTAL ACUTE CARE BEDS*		
ADULT ICU	_____	_____
MED/SURG	_____	_____
STEP DOWN	_____	_____
OTHER	_____	_____
TOTAL	_____	_____

*Exclude infant bassinets

19. Please list the number of admissions in your hospital for all patients and for medicare patients for the following years.

	ALL	MEDICARE
FY1982	_____	_____
FY1983	_____	_____
FY1984	_____	_____
FY1985	_____	_____
FY1986	_____	_____
FY1987 to date(if available)	_____	_____

20. Please list the total patient days in your hospital for all patients and for medicare patients for the following years.

	ALL	MEDICARE
FY1982	_____	_____
FY1983	_____	_____
FY1984	_____	_____
FY1985	_____	_____
FY1986	_____	_____
FY1987 to date(if available)	_____	_____

21. List the average acute care hospital occupancy rate for the following years for all patients and for Medicare patients.

	ALL	MEDICARE
FY1982	_____	_____
FY1983	_____	_____
FY1984	_____	_____
FY1985	_____	_____
FY1986	_____	_____
FY1987 to date(if available)	_____	_____

22. Which of the following factors have been significant in causing a change in census in the years since FY 82? Please rate each factor according to the overall trend based on the following scale:

1 = not significant at all
2 = not very significant
3 = moderately significant
4 = significant
5 = very significant
9 = don't know

a. ___ Chapter 372
b. ___ Competition from other hospitals
c. ___ HMO marketing
d. ___ improvements in medical technology
e. ___ A shift to more ambulatory care settings
f. ___ Medicare PPS (DRG reimbursement)
g. ___ Pressures for cost containment other than the above
h. ___ Other (Specify) _____

23. For each factor that you rated a four or five above, please describe the way in which the factor affected the change in hospital patient census.Please indicate the letter of factor in your response. (Use an extra page if necessary.)

Factor 1: _____
_____
Factor 2: _____
_____
Factor 3: _____
_____
_____

SUMMARY QUESTIONS

24. Chapter 574 requires the Department "to conduct an evaluation as to whether the medicare prospective payment system has affected the delivery of quality of care to medicare beneficiaries including the appropriateness of admissions and discharges to acute care hospitals." Please describe the impact that PPS has had on your institution (Please attach extra sheets if necessary).

25. Please provide any other comments or qualifiers you may have regarding this survey (Please attach an extra page if necessary).

_____
_____

This section of the survey should be completed by the Vice President for Nursing or her/his representative.

1. Hospital Name:_____ DPH#_____

2. What is your position? (please indicate)

_____

3. How long have you been in this position? (number of years)

_____

4. Since fiscal year 1982 which statement best characterizes the the amount of time spent by nurses in providing patient education?

(1)___ No change since FY 82 (skip to question 9)

(2)___ There has been an overall <u>increase</u> in the amount of time that nurses spend providing patient education.

Please check below the single fiscal year in which this increase was most significant:

___ 1982	___ 1985
___ 1983	___ 1986
___ 1984	___ 1987 to date

(3)___ There has been an overall <u>decrease</u> in the amount of time that nurses spend providing patient education.

Please check below the single fiscal year in which this decrease was most significant.

___ 1982	___ 1985
___ 1983	___ 1986
___ 1984	___ 1987 to date

(4)___ There have been significant fluctuations with no overall net change.

Please describe this trend in terms of fiscal years:

_____
_____
_____
_____

5. Please indicate the significance of the following factors in affecting this change in the amount of time spent by nurses in providing patient education. Please rate each factor according to the overall trend based on the following scale:

   1 = not significant at all
   2 = not very significant
   3 = moderately significant
   4 = significant
   5 = very significant
   9 = don't know

   a.___ Change in the labor supply
   b.___ Aging patient population
   c.___ Chapter 372
   d.___ Medicare PPS
   e.___ Change in patient expectations
   f.___ Improvements in medical technology
   g.___ Use of temporary help
   h.___ Cost containment
   i.___ Change in competition from other hospitals
   j.___ PRO review
   k.___ Change in severity of illness
   l.___ Other_____

6. For each factor that you rated a four or five above, please describe the way in which the factor has affected the change in the amount of time spent by nurses in providing patient education. Please be sure to indicate the letter of each factor or factors in your response.(Attach additional sheets if necessary.)

   Factor 1: _____
   _____

   Factor 2: _____
   _____

   Factor 3: _____
   _____

7. If there has been a change in the amount of time spent by nurses in providing patient education, has this resulted in any new patient education programs?

   _____ (yes = 1, no = 2)

8. If yes, please describe these new programs.
   _____
   _____

9. Since fiscal year 1982 which statement best characterizes the change in the size of the nursing staff in your institution?

   (1)___ No change since FY 82 (skip to question 13)

(2)___ There has been an overall <u>increase</u> in the size of the nursing staff

Please check below the single fiscal year in which this increase was most significant:

___ 1982 ___ 1985
___ 1983 ___ 1986
___ 1984 ___ 1987 to date

(3)___ There has been an overall <u>decrease</u> in the size of the nursing staff.

Please check below the single fiscal year in which this decrease was most significant.

___ 1982 ___ 1985
___ 1983 ___ 1986
___ 1984 ___ 1987 to date

(4)___ There have been significant fluctuations with no overall net change.

Please describe this trend in terms of fiscal years:

_____
_____

10. In which of the following positions have the changes occurred? (Please indicate if there has been an increase, decrease or no change in the following areas.)

	Increase	decrease	No change
1. Nurses aides	_____	_____	_____
2. LPN's	_____	_____	_____
3. RN's	_____	_____	_____
4. Nursing administrators	_____	_____	_____
5. Support staff (e.g. clerks and housekeeping)	_____	_____	_____
6. Other, please specify _____	_____	_____	_____

11. Please indicate the significance of the following factors in affecting this change in the size of the nursing staff. Rate each factor according to the following scale:

1 = not significant at all
2 = not very significant
3 = moderately significant
4 = significant
5 = very significant
9 = don't know

a.___ Change in the labor supply
b.___ Shift of patients to ambulatory care settings
c.___ Chapter 372
d.___ Medicare PPS
e.___ Pressures for cost containment other than above
f.___ Improvements in medical technology
g.___ Use of temporary help
h.___ HMO Market
i.___ Change in competition from other hospitals.
j.___ PRO review
k.___ Change in number of admissions
l.___ Change in inpatient length of stay
m.___ Change in number of beds in the hospital
n.___ Other, please explain _____

12. For each factor that you rated a four or five above, please describe the way in which the factor affected the size of the nursing staff.Please indicate the letter of factor in your response. (Attach additional sheets if necessary.)

Factor 1: _____
_____

Factor 2: _____
_____

Factor 3: _____
_____

13. Since fiscal year 1982 which statement best characterizes the change in the severity of illness of patients in your hospital?

(1)___ No change since FY 82 (skip to question 16)

(2)___ There has been an overall <u>increase</u> in the severity of illness.

Please check below the single fiscal year in which this increase was most significant:

___ 1982 ___ 1985
___ 1983 ___ 1986
___ 1984 ___ 1987 to date

(3)___ There has been an overall <u>decrease</u> in the severity of illness.

Please check below the single fiscal year in which this decrease was most significant.

___ 1982 ___ 1985
___ 1983 ___ 1986
___ 1984 ___ 1987 to date

(4)___ There have been significant fluctuations with no overall net change.

Please describe this trend in terms of fiscal years:

14. Which of the following factors have been significant in affecting the change in severity in the years indicated above? Please rate each factor according to the following scale:

    1 = not significant at all
    2 = not very significant
    3 = moderately significant
    4 = significant
    5 = very significant
    9 = don't know

    a.___ Greater number of patients being treated as outpatients, leading to sicker inpatient mix
    b.___ Transfer of sicker patients to your institution
    c.___ Aging population
    d.___ Changes in technology
    e.___ Medicare PPS
    f.___ Chapter 372
    g.___ Other, please explain _____

15. For each factor that you rated a four or five above, please describe the way in which the factor has affected the severity of illness. Please indicate the letter of factor in your response.(Attach additional sheets if necessary.)

    Factor 1: _____
    _____
    _____

    Factor 2: _____
    _____
    _____

    Factor 3: _____
    _____

16. Has the ability of the nursing staff to perform "professional nursing functions" been affected by a change in support staff in the past five years(i.e. decrease or increase in the number of certain personnel such as pharmacy, dietary, etc.)

    ___ (yes = 1, no = 2)

17. If yes, please describe how the ability of the nursing staff to perform "professional nursing functions" has been affected by a change in support staff (Please attach additional sheets if necessary).

    _____
    _____
    _____
    _____

STATISTICS

18. Please indicate the ratio of nursing hours per patient day for each of the following patient care areas:(Direct care hours, exclude head nurse and clerical staff)

	FY 1986	FY 1985	FY 1984	FY 1983	FY 1982
Adult ICU	_____	_____	_____	_____	_____
Med/Surg	_____	_____	_____	_____	_____
Step Down	_____	_____	_____	_____	_____
Other	_____	_____	_____	_____	_____

SUMMARY QUESTION

19. Chapter 574 requires the Department "to conduct an evaluation as to whether the medicare prospective payment system has affected the delivery of quality of care to medicare beneficiaries including the appropriateness of admissions and discharges to acute care hospitals." Please describe the impact that PPS had on the quality and access to care in your hospital. Attach an extra page if necessary.

20. Please provide any additional comments or qualifiers that you may have regarding the survey. Attach an extra page if necessary.

This section should be completed by the person in charge of discharge planning.

1a. Hospital Name:_____ DPH#_____

1b. What is your position? (please indicate)

_____

1c. How long have you been in this position (in years)?

_____

2. What is the primary method used by your hospital to determine which inpatients receive discharge planning services? (Please check the primary method only)

1.___ Formal screening at or soon after admission
2.___ Professional judgment of discharge planner
3.___ Referral by physician
4.___ Referral of other staff
5.___ Discharge planning rounds
6.___ Other, please specify _____

3. Since fiscal year 1982, please characterize the change in the number of staff specifically assigned to the function of discharge planning.

(1)___ No change since FY 82 (skip to question 6)

(2)___ There has been an overall increase in the size of the staff.

Please check below the single fiscal year in which this increase was most significant:

___ 1982 ___ 1985
___ 1983 ___ 1986
___ 1984 ___ 1987 to date

(3)___ There has been an overall decrease in the size of the discharge planning staff.

Please check below the single fiscal year in which this decrease was most significant.

___ 1982 ___ 1985
___ 1983 ___ 1986
___ 1984 ___ 1987 to date

(4)___ There have been significant fluctuations with no overall net change.

Please describe this trend in terms of fiscal years:

4. Please indicate the significance of the following factors in necessitating a change in the number of discharge planning staff in the last five years. Please rate each factor according to the overall trend based on the following scale:

1. not significant at all
2. not very significant
3. moderately significant
4. significant
5. very significant
9. don't know

a.____ Change in the labor supply
b.____ Aging patient population
c.____ Chapter 372
d.____ Medicare PPS
e.____ Change in patient length of stay
f.____ Increase in patient severity of illness
g.____ Change in the number of admissions
h.____ PRO review
i.____ Other, please explain_____

5. For each factor that you rated a four or five above, please describe the way in which the factor affected the size of the discharge planning staff. Please be sure to indicate the letter of the factor or factors in your response. (Use an attached sheet if necessary.)

Factor 1: _____
_____
_____
_____

Factor 2: _____
_____
_____
_____

Factor 3: _____
_____
_____
_____

6. Since fiscal year 1982, which statement best characterizes any change in the number of medicare patients needing post hospital services?

(1)___ No change since FY 82 (skip to question 10)

(2)___ There has been an overall <u>increase</u> in the number of medicare patients needing post hospital services.

Please check below the single fiscal year in which this increase was most significant:

___ 1982	___ 1985
___ 1983	___ 1986
___ 1984	___ 1987 to date

(3)___ There has been an overall <u>decrease</u> in the number of medicare patients needing post hospital services.

Please check below the single fiscal year in which this decrease was most significant.

___ 1982	___ 1985
___ 1983	___ 1986
___ 1984	___ 1987 to date

(4)___ There have been significant fluctuations with no overall net change.

Please describe this trend in terms of fiscal years:

_____

_____

7. In which of the following areas has the number of medicare patients needing post hospital services changed? (Check all that apply.)

	Increased	Decrease	No Change
a. skilled nursing facilities	_____	_____	_____
b. rehabilitation facilities	_____	_____	_____
c. home health care services	_____	_____	_____
d. intermediate care beds	_____	_____	_____
e. homemaker services	_____	_____	_____
f. other, please specify			
_____	_____	_____	_____

8. Please indicate the significance of the following factors in affecting the change in the number of medicare patients needing post-hospital services. Please rate each factor based on the overall trend according to the following scale:

1. not significant at all
2. not very significant
3. moderately significant
4. significant
5. very significant
9. don't know

a.___ Improvements in medical technology
b.___ Aging of the patient population (i.e. more frail elderly)
c.___ Chapter 372
d.___ Medicare PPS
e.___ Decrease length of hospital stay
f.___ Increase in patient severity of illness
g.___ Change in patient expectations
h.___ Other, please explain_____

9. For each factor that you rated a four or five above, please describe the way in which the factor affected the change in the level of need for post hospital care among the medicare patients. Please indicate the letter of factor in your response.(Use an attached sheet if necessary.)

Factor 1: _____
_____

Factor 2: _____
_____
_____

Factor 3: _____
_____

10. Since fiscal year 1982, which statement best characterizes any changes in the difficulty of placing hospitalized medicare patients in skilled or intermediate nursing facilities?

(1)___ No change since FY 82 (skip to question 13)

(2)___ There has been an overall <u>increase</u> in the difficulty of placing medicare patients

Please check below the single fiscal year in which this increase was most significant:

___ 1982 ___ 1985
___ 1983 ___ 1986
___ 1984 ___ 1987 to date

(3)___ There has been an overall <u>decrease</u> in the difficulty of placing medicare patients.

Please check below the single fiscal year in which this decrease was most significant.

___ 1982 ___ 1985
___ 1983 ___ 1986
___ 1984 ___ 1987 to date

(4)___ There have been significant fluctuations with no overall net change.

Please describe this trend in terms of fiscal years:

_____

11. Please indicate the significance of the following factors in making it more difficult or less difficult to place medicare patients in skilled or intermediate nursing facilities. Please rate each factor according to the overall trend based on the following scale:

    1. not significant at all
    2. not very significant
    3. moderately significant
    4. significant
    5. very significant
    9. don't know

    a.___ Medicare rules and regulations, please explain _____

    b.___ Medicaid rules and regulations, please explain _____

    c.___ Availability of skilled nursing home beds
    d.___ Availability of intermediate care nursing home beds
    e.___ Need for complex and/or skilled services (e.g. feeding pumps, IV's, respirators)
    f.___ Need for "heavy" care (i.e. inability to perform activities of daily living)
    g.___ Social situation (e.g. living conditions, family situation)
    h.___ Legal situation (e.g. conservatorship)
    i.___ Decreasing hospital lengths of stay
    j.___ Other, please specify _____

12. For each factor that you rated a four or five above, please describe the way in which the factor made placing medicare patients more difficult or less difficult.Please indicate the letter of factor in your response. (Use an attached sheet if necessary.)

    Factor 1: _____
    _____

    Factor 2: _____
    _____

    Factor 3: _____
    _____

13. Since fiscal year 1982, which statement best characterizes any changes in the difficulty of arranging home care services for hospitalized medicare patients

    (1)___ No change since FY 82 (skip to question 11)

    (2)___ There has been an overall <u>increase</u> in the difficulty of arranging home care

Please check below the single fiscal year in which this increase was most significant:

___ 1982	___ 1985
___ 1983	___ 1986
___ 1984	___ 1987 to date

(3)___ There has been an overall <u>decrease</u> in the difficulty of arranging home care.

Please check below the single fiscal year in which this decrease was most significant.

___ 1982	___ 1985
___ 1983	___ 1986
___ 1984	___ 1987 to date

(4)___ There have been significant fluctuations with no overall net change.

Please describe this trend in terms of fiscal years:

_____
_____
_____
_____

14. Please indicate the significance of the following factors in making it more difficult or less difficult to arrange home care services for medicare patients. Please rate each factor according to the overall trend based on the following scale:

1. not significant at all
2. not very significant
3. moderately significant
4. significant
5. very significant
9. don't know

a.___ **Medicare** rules and regulations, please explain
_____

b.___ **Medicaid** rules and regulations, please explain
_____

c.___ **Need** for complex and/or skilled services (e.g. feeding pumps, IV's, respirators)
d.___ Need for "heavy" care (i.e. inability to perform activities of daily living)
e.___ Social situation (e.g. living conditions, family situation)
f.___ Legal situation (e.g. conservatorship)
g.___ Decreasing hospital lengths of stay
h.___ Other, please specify _____

15. For each factor that you rated a four or five above, please describe the way in which the factor made arranging home care services for medicare patients more difficult or less difficult. Please indicate the letter of factor in your response.(Use an

Factor 1: _____
_____

Factor 2: _____
_____

Factor 3: _____
_____

16. In thinking about the post discharge quantity of services needed by medicare patients, do you feel that the current supply of the following post hospital health care services serving your community is adequate or inadequate? (check off the appropriate box)

(very adequate = 1, adequate = 2, marginal = 3, inadequate = 4, very inadequate = 5, don't know = 6)

a. Skilled nursing beds _____
b. Rehabilitation centers _____
c. Home health care _____
d. Adult congregate living facility _____
e. Intermediate care beds _____
f. Homemaker services _____
g. Hospices _____
h. Respite Care _____
i. Adult Day Health Care _____
j. Other, please specify _____
_____

17. Does the discharge planning department perform follow-up to determine whether post-hospital care services that have been planned for are actually provided?

___ (yes = 1, no = 2)

18. If yes, insofar as you can determine, are you satisfied that patients are actually receiving the post-hospital services that they need? Please explain.

___ (yes = 1, no = 2)

SUMMARY QUESTIONS

Chapter 574 requires the Department "to conduct an evaluation as to whether the medicare prospective payment system has affected the delivery of quality of care to medicare beneficiaries including the appropriateness of admissions and discharges to acute care hospitals."

19. Please describe the impact that PPS had on the quality and access to care in your hospital.

---

20. Please provide any comments regarding the post hospital needs of medicare patients or any qualifiers regarding the survey.

APPENDIX II

PPS SURVEY HOSPITALS

ADDISON GILBERT
* AMESBURY
ANNA JAQUES
* ATHOL MEMORIAL
ATLANTICARE (UNION & LYNN)
BAY STATE MEDICAL CENTER
BERKSHIRE MEDICAL CENTER
BETH ISRAEL
BEVERLY
BON SECOURS
BOSTON CITY
BRIGHAM AND WOMEN'S
BROCKTON
BROOKLINE
BURBANK
CAMBRIDGE
CAPE COD
CARDINAL CUSHING GENERAL
CARNEY
CENTRAL
CHARLTON MEMORIAL
CHOATE-SYMMES HEALTH SERVICE
CLINTON
COOLEY DICKINSON
DOCTORS HOSPITAL OF WORCESTER
* EMERSON
FAIRLAWN
FAIRVIEW HOSPITAL
FALMOUTH
FARREN MEMORIAL
FAULKNER
FRAMINGHAM
FRANKLIN MEDICAL CENTER
GLOVER MEMORIAL
GODDARD MEMORIAL
* HAHNEMANN
HARRINGTON MEMORIAL
HAVERHILL MUNICIPAL
HENRY HEYWOOD MEMORIAL
* HILLCREST
HOLDEN DISTRICT
HOLYOKE
HUBBARD REGIONAL
HUNT MEMORIAL
HUNTINGTON GENERAL
JORDAN
JOSIAH B. THOMAS
LAHEY CLINIC HOSPITAL
LAWRENCE GENERAL
LAWRENCE MEMORIAL OF MEDFORD
LEOMINSTER

APPENDIX II

PPS SURVEY HOSPITALS

	LEONARD MORSE
	LOWELL GENERAL
	LUDLOW HOSPITAL
	MALDEN
	MARLBOROUGH
	MARTHA'S VINEYARD
*	MARY A. ALLEY
	MARY LANE
	MASSACHUSETTS GENERAL
*	MASS. EYE AND EAR INFIRMARY
	MELROSE-WAKEFIELD
*	MEMORIAL OF WORCESTOR
	MERCY
	MILFORD WHITTINSVILLE REGIONAL
	MILTON
*	MORTON
	MOUNT AUBURN
	NANTUCKET COTTAGE
	NASHOBA COMMUNITY
	NEW ENGLAND BAPTIST
	NEW ENGLAND DEACONESS
	NEW ENGLAND MEDICAL CENTER
	NEW ENGLAND MEMORIAL
*	NEWTON-WELLESLEY
	NOBLE HOSPITAL
	NORTH ADAMS REGIONAL
	NORWOOD
	PARKWOOD OF NEW BEDFORD
	PROVIDENCE
	QUINCY CITY
	SALEM
	SANCTA MARIA
	SOMERVILLE
	SOUTH SHORE
	SOUTHWOOD COMMUNITY
	ST. ANNE'S
	ST. ELIZABETH'S
	ST. JOHN'S
	ST. JOSEPH'S
	ST. LUKE'S
	ST. LUKE'S MIDDLEBORO
#	ST. MARGARET'S FOR WOMEN # EXCLUDED FROM THE SURVEY
	ST. VINCENT
	STURDY MEMORIAL
	TOBEY
*	UNIVERSITY
	UNIVERSITY OF MASSACHUSETTS
*	VINCENT MEMORIAL
	WALTHAM
	WHIDDEN MEMORIAL
	WINCHESTER

APPENDIX II

PPS SURVEY HOSPITALS

WING MEMORIAL
WINTHROP
WORCESTER CITY
WORCESTER HAHNEMANN

* Denotes hospitals not responding or responding too late.

APPENDIX III

STATISTICAL METHODS

Although the bulk of the material presented in the report is descriptive, statistical methods were used in analyzing two aspects of the findings. Repeated Measures Analysis of Variance (ANOVA) was used to assess differences among the factors with respect to their importance in causing a reported change, and Kappa coefficients were calculated to assess the reliability of our raters' characterization of the open ended questions. A description of each of these techniques follows in turn.

Repeated Measures Analysis of Variance

Analysis of variance is a standard statistical approach for analyzing differences among groups with respect to a variable of interest. In the present instance, we were interested in analyzing differences among the ratings of the significance of factors in bringing about change. In a typical case, each hospital administrator rated the importance (significance) of several factors in bringing about change on the variable of interest -- for example, profiling of physician practice patterns. The analysis tells us whether the observed pattern of differences among the means is likely or unlikely to have occurred by chance. If the means are close together, random variation is a likely explanation; if far apart, an unlikely explanation.

In the data presented in this report, all ANOVA findings are highly significant, suggesting that the explanatory factors did indeed differ from each other with respect to their perceived importance in causing change. The usual next step is to identify the particular factors which are responsible for the overall significance of the finding. We have conducted such analyses only in cases where PPS received the highest mean rating. PPS was rated most highly only on the physician profiling question. In this case, a planned comparison was conducted to test the difference between the PPS mean rating and the average rating of all the other factors. Because this difference was significant, we can conclude than PPS received a significantly higher rating than the other factors in the assessment of the reasons for increases in physician profiling. These techniques are presented in detail in Weiner, B.J. Statistical Principles of Experimental Design, McGraw-Hill, 1962.

Kappa Coefficients

Respondents to the hospital survey answered an open ended question allowing them to describe in their own words the impact of PPS on access and quality. In order to summarize these responses, we needed to characterize each open ended question as indicating a positive, negative, or null impact of PPS on access or quality. Two independent raters classified each administrator's response into one of the following categories:

Positive Impact
Negative Impact
No Impact

Unable to Determine.

In order to use these categorizations, we must be able to demonstrate that independent raters are in agreement on such a classification. The Kappa coefficient is a measure of such agreement. Like a correlation coefficient, it ranges of -1 to +1, with a coefficient of +1 indicating complete agreement. Kappa coefficients for access and quality were .477 and .645, both highly significant and indicative of moderate agreement between the two raters. The interested reader should consult Bishop et. al. cited in the list of references.

Selected Comments from Hospitals

Regarding PPS Impact on Access and Quality

Appendix IV reports quotations from the individuals indicating that PPS has had a positive or negative impact. Quotations that were unclear or where no impact is reported are not reproduced.

Positive Impact

From Hospital Administrators:

"The impact on quality of care has been positive. Because of the pressure from PPS, the quality assurance program runs much better than it would otherwise would. Recent cutbacks for Medicare put physicians and the hospitals in the middle to address patient complaints."

"The quality of care to our Medicare patients has improved because we have hired nurses to replace nursing aides. In addition, we have incorporated reccommendations of our quality Assurance Committee. We have purchased new equipment and made renovations to insure more intense monitoring of our more acutely ill patients."

From Nursing Administrators:

"In some ways the quality of care to Medicare beneficiaries has increased as a result of Chapter 574. We are slowly shifting to a higher professional staff mix because the patient population has higher acuity and greater technological needs. All of our admissions are appropriate and we have increased the availability of ambulatory services."

"The Department of Nursing has decreased the technical employees [and] increased the professional components. With increased RN staff the discharge plans are intiated on admission and all support services in place prior to discharge day. This increases the quality of care while decreasing the length of stay."

From Discharge Planners:

"PPS has resulted in our hospital carefully scrutinizing the manner in which we provide care to emphasize increased efficiency. This has resulted in increased quality of patient care in the overall hospital population and has not impacted access to this care."

Negative Impact

From Hospital Administrators:

"In FY 1986, [this facility] incurred an operating loss of over $3 million, of which $2 million was Medicare underpayment. State law prevents us from cost shifting our Medicare underpayment. We are unable to pay competitive wages and are seriously understaffed. Medicare PPS has seriously impaired our ability to provide quality care to all our patients and threatens the very survival of hospital services in this area."

"The quality of care has suffered somewhat. We are pushing patients out of the hospital with out sufficient support systems in place to assist with home care."

"Overall, the average patient acuity is increased due to the non-hospitalization of the less acute patient. Many programs desirable to the market are unaffordable for the community hospital to provide."

"Inconclusive evidence suggests both improvements in utilization appropriateness and some deterioration not only in quality of care but also medical staff, nursing staff, and hospital support staff relations which may detract from high quality care."

"Because of PPS patients are not admitted as promptly as they previously were. This can be a cause for poorer quality of care. Many patients are discharged sooner and experience much more trauma in their recovery."

"It's difficult to single out one factor (PPS implementation) in the complex and changing system of health care and ascribe a cause of any given effect. The delivery of health care has changed dramatically over the past few years but I would not say that the quality of services delivered to Medicare beneficiaries has decreased at this institution. Access has quite intentionally been limited by nearly all payors-Medicare, HMO's, Blue Cross-all have pre-admission certification-but I am not aware of any patients who were denied appropriate admission."

"The increased pressure to discharge sick, frail, elderly people to inadequate resources to cope with daily living has increased the level of anger, tension and frustration among health care providers and the elderly community."

"Quality of care has not been affected to Medicare beneficiaries. The impact has been on acuity and appropriateness of discharge. Discharge has been impacted by appropriateness of placement-home health care services availability-extreme shortages of homemakers and home health aides. Admission to the hospital has been affected by criteria that results in a higher acuity of care in the hospitalized patient."

"In the 15 months since this hospital has come under PPS, review of admissions to ascertain appropriateness has had the greatest impact. So called social admissions are now totally discouraged. Physicians have come to realize this and only use the hospital as a last resort. Monitoring of continued stay has occurred for some time and PPS has not impacted this hospital in that regard."

"Probably the single most important impact has been the discharge of patients earlier than in the past. It is indeed very difficult to attain the proper balance of medical and social support systems for every patient, prior to their discharge. The PPS system presumes that a comprehensive network of supports is readily availability for all patients. This is not so."

"Extreme financial pressures are felt due to significantly reduced payments from Medicare. These reductions are primarily caused by having a much higher cost per discharge than the national average (i.e. the Medicare blended rate process). This process of moving to a standardized national rate will cause our institution to reduce over 25% of annual operating costs in a 3 year period. While efficiencies can be gained through better management in many areas, certainly a required reduction of 25% will lead to much different types of care and services offered to our patients."

"PPS has resulted in people being hospitalized less often and being discharged sooner than was the case in pre-DRG days. Results in greater need for communication with patients so they understand rationale and their rights. Results in need for superior discharge planning and assurance that home care services are available as quality of hospital care is not compromised."

"Continued cutbacks in access and quality due to reduced revenue from PPS. Federal cutbacks are endangering our system of health care services."

"This is more appropriately a medical question. My perception is that patient admissions are delayed and certainly discharges are advanced."

"Because of financial risk to the hospital several functions have experienced intensified focus on compliance with regulations-most notably patient registration, UR, social service/discharge planning, medical records. These activities all require MD time as well, time therefore that is not spent with patients."

"Patients are largely limited to receiving absolutely necessary care. Providers are hard pressed to provide the higher staffing levels and social support that address the emotional aspects of any illness. Expected lengths of stay assume that a perfect array of community services exist to fill the gaps. Third parties rarely pay for such services and in rural areas they are often unavailable. The use of outpatient services is an unrealistic expectation for many patients."

"This question cannot be easily answered, either positively or negatively. I believe there is too much preoccupancy with LOS and average utilization and that there is a tendency for physicians and others responsible for patient care to, subconsciously perhaps, rush our patients toward the average. This creates a selffulfilling prophecy about average length of stay but it isn't necessarily in the best interests of the patients. To my mind there is no question but that many patients leave the hospital too early-but usually for social and non-acute care issues-not to be denied acute care services. We're dealing with an older population and I don't believe society (particularly in the health care setting) has given enough thought to the true need of the patients."

"Reimbursement levels under PPS and Chapter 372 have significantly lagged behind the costs hospitals have to pay. Patients being discharged sooner require more staff time for education and discharge planning and the financial constraints imposed on hospitals as a result of PPS and Chapter 372 are making it difficult for hospitals to provide that time. PPS places the hospital at financial risk. Hospitals are acting rationally to limit that risk by setting up systems and incentives designed to ensure that the cost per case does not exceed the limited DRG reimbursement. These systems and incentives are having a perverse impact on physicians decision making with regards to patient care."

"The Northeastern section of this county continues to exhibit utilization patterns that are higher than those in other areas (after age and sex adjust.) LOS reductions, more aggressive use of outpatient treatment modalities and reduced use of ancillaries are all positive and have not in my opinion adversely affected quality of care. Negative affects include: increases in equipment, inadequate placement alternatives for nursing home patients, large number of outliers."

"The impact of PPS has been a mixture of plus's and minus's for the institution. Decreasing inpatient activity has caused us to downgrade our workforce and in many areas this has led to loss of flexibility and some restrictions in scope of services. While productivity has increased it has in many cases been at the expense of personalized, unhurried services to our patients. The communities perception of quality of care has suffered more than actual quality of care. We have created hardships on patients and families (very often frail elderly) who are forced to leave the hospital before they feel ready or to undergo surgical procedures or diagnostic studies without the safety, security and comfort of 24 hour professional care. Too frequently the hospital is the 'heavy' in these situations further shaking the confidence of the public in our health care system."

"Patients whose social need not material needs are often not included. Social problem are not considered as an issue in discharge and they are often very real and effect medical condition and readmission."

From Nursing Administrators:

"With emphasis on cost containment which impacts benefits, desirability of entering nursing field, working condition, I believe there has been an overall decrease in quality of care. It is much more difficult to maintain desired standards with shift to ambulatory and less preparation time for procedures, with increased acuity of inpatients, with vacancies on staff, with shorter length of stay. Given all of these factors, the quality is negatively impacted."

"PPS impacts LOS as does shift to outpatient services, yet not enough has been done to facilitate patients in after-care at home. Also nothing has been done to effectively make alternatives to acute care possible. It seems more nursing home beds are definitely indicated. The growing elderly population in many cases cannot manage without support services at home."

"Methods used to screen patients and to limit their length of stay in the hospital compromises the quality the patient care. Home care is insufficient to meet the needs of the elderly population on a 24-hour a day basis. The elderly population is requiring nursing home care post-hospitalization because of their status on discharge; however, there is insufficient numbers of beds in nursing homes to meet this need. Empty hospital beds with a surplus of patients for insufficient number of nursing home beds is not the solution to the problem. Insufficient home care and the cost to the elderly patient is wrong."

"Hospitals have worked diligently to preserve the delivery of care to Medicare beneficiaries. The increase in acuity would suggest that admissions are appropriate. I do not have the appropriate information to comment on the appropriateness of discharges. Access to care is a concern of many patients and families who are treated in the Emergency Department and are seeking admission. In some instances, the nurses as well have expressed concern regarding the ability of the patient to be cared for in the home."

"Due to DRG reimbursement system some patients might do better if they came in earlier for surgical procedures. Patients might be better to stay an extra day or two after surgery or an illness. They could cope better at home, especially if they didn't have any support system available to them. Patients are eligible for Level II nursing homes sooner and not a sufficient number of Level II nursing beds available, which creates a backlog of AND patients."

"PPS has forced our hospital to comply with earlier discharge and limited admission criteria. Since the majority of our patients are elderly this pattern has been uncomfortable for the patient as well as the care giver. Appropriate resources are not always readily available to care for the patient upon discharge and it is frequently difficult for the elderly patient to come in on an out-patient basis for surgical work-ups, etc. Some invasive procedures are difficult for the elderly patient to tolerate on an out-patient basis. Admission on the day of surgery have been difficult for most patients. In spite of these changes, I do not feel that the actual quality of care has been compromised. This is largely [due to] our committee structure and the development of appropriate programs, positions, and relationships to support the patient. In fact, PPS has required a significant shift in methodology in some cases, greater expense in order to maintain quality care in particular for the elderly patient and especially those patients with catastrophic illnesses."

"I don't feel at this time that PPS has had a negative affect on the quality of care in the hospital. The screening process has had an impact on the acuity of patients admitted and the length of stay. There seems to be a greater problem with access to care in the community once the patients are ready for discharge."

"PPS has not had an impact on the quality of care to Medicare beneficiaries in the hospital, but there appears to be an impact on access to care due to the regulations of this system-not specifically in this hospital but in the entire health system."

"Quality of care has not changed at this hospital while they have remained hospitalized. Patients and family education, understanding of treatment modalities related to their disease and return of compliance to the above mentioned has been hindered by the restrictions of after care services."

"Until the present fiscal year, I do not feel the quality of care has been seriously affected at our hospital. There is no doubt that patients are much sicker on admissions thatn in the past. With the current shortage of nurses, the quality of care will decrease I also feel that the public does not understand what the term "medically necessary" means and families find it difficult to understand why their elderly relatives cannot stay in the hospital for longer length of stays. Patients are leaving in a weaker state than they did two years ago."

"There is a diminishing length of stay yet there is no central coordination point to assure that patients' ongoing needs are met. It seems to me that it is inevitable that some patients fall through the cracks. Any patient in need is admitted, however, reimbursement for a sufficient number of days to meet the patients' rehabilitative caring and psych-social needs is not considered in the Medicare PPS. I have concerns regarding the potential for undercare."

"It is difficult to qualify if quality has been impacted. Indicators would not substantiate quality has been affected. Overall I do not believe quality has been compromised. Community resources must be evaluated and upgraded if the direction toward early discharge continues. Resources are not readily available and reimbursement for these services is problematic. I do not believe access to care for those who need it is a problem although I do believe more indepth evaluation and scrutiny is carried out on the need for in-patient [care]."

"Access to inpatient care restricted. Length of stay is restricted. Cost of supplies have increased, which increases hospital costs that may or may not exceeed PPS payment. Mix of staff and numbers will have to change, labor costs continue to rise. Question if numbers and mix will change, which may impact patient care negatively."

From Discharge Planners:

"The provisions of the current Medicare regulations are inconsistent with the needs Pt's[patient's] present on discharge. The numbers of trained home health aides and homemakers and the quality of their services need immediate improvement."

"I do not believe that the problems are inherent in the hospitals but rather with the home care agencies, their lack of funding necessary to provide the necessary staff."

"Major needs are to: 1) increase the emphasis (& subsequently payment) to the less acute service providers, i.e., increase skilled care subsidies, home care allotments, and definition of caring; 2) increase number of SNF & ICF beds available; 3) look at preventative model - pro-acting to elders needs as opposed to reacting; 4) etc."

"Nursing home beds are difficult to find. This has been true for at least 10 years. Short term beds for convalescent care is a problem."

"Emphasizing community vs. hospital care requires adequate hospital reimbursement and increased community funding. Given all available [information], can we really expect to contain costs? It seems that we should be solving the more difficult question of what we want to afford."

"The post hospital care provided is primarily derived from the two agencies. When they are experiencing funding restraints or a lack of availability of personnel it impacts directly on the quality of discharge planning services. In respect to the patient in need of extended care placement it is significant to note that Medicare beneficiaries are disappointed to learn that Medicare finances placement to only a minimal degree."

In [this] area, comprised of 15 towns and cities, there are 246 frail elders waiting for homemaker and personal care services at the present time."

"Level I placement possibilities are almost non-existent. More and more services are not covered for homecare. Services are being cancelled because of funding cut backs."

"Chronic care needs must be more adequately addressed. Currently, Medicare is of no help in covering such needs in the home. Desperate need for long-term care insurance to avoid depletion of elderly life savings."

"There has been a substantial change in the care our elderly feel they are guaranteed by Medicare. The burden on our elders has shifted. Many of our elders are frequently unable to assume this new burden. Any elder without financial resources and/or family support is more at risk than ever before. This trend needs to be reversed. Medicare should not be allowed to limit access to in-patient care while also restricting eligibility and services for community help. The elderly should not be fooled about their coverage and left to scapegoat the hospital system for new restrictions. Similarly, the government should not develop public relations salvos."